

PARENT CORNER

Developing Your Child's Brain

By Patricia von Oelhoffen



Photo: Tatiana von Oelhoffen

▷ As babies explore their environment, their brains form the connections that are the basis for learning.

ment, emotional life, learning, and interaction with others.

Although individual development varies, growth occurs in four areas:

- physical, including the development and growth of body, muscles, and senses;
- cognitive, including the abilities to listen, reason, understand, use words, solve problems, and follow directions;
- social and emotional, including awareness of self and interaction with others; and
- self-help, or the ability to care for one's self.

Making Connections

Every baby is born with around 100 billion brain cells, but not all the connections between these cells have yet been established. Brain development begins shortly after conception, and the part of the brain that monitors basic survival functions such as heartbeat and breathing is operational at birth. Reflex actions, simple motor behavior, and emotions develop next, while complex coordination and planning, reasoning, and decision making follow much later.

Babies have a biological need to learn. From birth, they rapidly begin to explore their environment through the senses: seeing, hearing, smelling, tasting, and feeling. These sensory experiences help build the connections between brain cells. The more stimulating experiences babies have, the more connections

As parents, we are blessed with wonderful opportunities to nurture and guide our children. One of the most important is the opportunity to foster mental development. With the benefit of new technology and scientific research, we know more about this process than ever before.

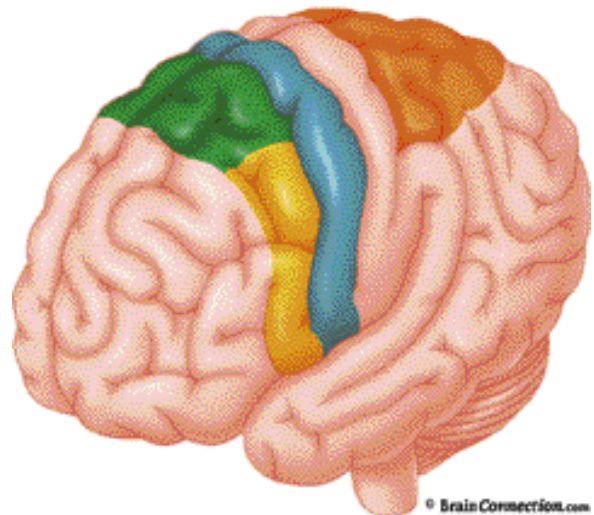
A child's experiences in the first three years of life are critical to mental growth and development. A stimulating home environment and consistent, responsive nurturing by parents and other caregivers has life-long impact on physical develop-

ment. Relationships are also critically important to healthy brain development. Repeated experiences, such as seeing familiar faces, recognizing voices, and responding to touch, strengthen brain connections. Playtime is essential to learning and development as well.

The process of building and strengthening brain connections continues throughout our lives, but is at its most intense between ages 3 and 12. At 3, a child's brain is more than twice as active as an adult's, though an adult's brain is more efficient because it has eliminated unneeded connections. By puberty, based on use and experience, the brain selectively strengthens reinforced connections, which become permanent, and eliminates those that are seldom used.

Windows of Opportunity

Important periods during which the brain matures and responds to specific types of input are referred to as windows of opportunity. Providing appropriate stimuli during these periods is critical, since



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▷ A child's ability to learn the skills residing in the motor areas of the brain (highlighted in this drawing) is most pronounced during the first six years of life.

brain cells responsible for such functions will lose their ability to perform when the windows close. While the skill level may not be as high, however, lifelong learning in these areas can still occur.

Visual information. Between birth and 4 years, babies develop the ability to recognize and organize visual information by seeing movement, objects, shapes, and colors at varying distances. As parents, you should provide your babies with visual stimulation, which can produce developmental advantages such as enhanced curiosity, attentiveness, and concentration. This

will also make your baby happy.

Motor skills. A child's ability to learn motor skills, such as crawling, walking, and balancing, is most pronounced in the first 6 years. As parents, give your children plenty of opportunities to move around, crawl or walk (rather than being carried), run, and play active games.

Emotional intelligence. From 2-30 months, children are struggling to discover the best ways of getting what they want. What they learn during this period, when emotional and rational systems are developing, will have lifelong impact. It will be difficult to change patterns set after the window of opportunity closes. The window for emotional intelligence, which predicts about 80% of career success, is open from birth to age 10.

As parents, you can nurture your children by responding emotionally – displaying love, smiling, and interacting face-to-face. The more you touch, hold, and cuddle your babies, the faster their brains grow and develop. To alleviate their stress, which can slow brain development, you should provide a safe and secure environment and respond and be attentive to their cries.

Appropriate discipline – which is teaching, not punishment – can enhance your children's self-esteem and support adjustments to their thinking processes.

Language. The window for spoken language and vocabulary opens soon after birth and closes around ages 10-11. Beyond that, learning any language

becomes more difficult. At 2 months, our brains are genetically programmed for language, and babies start uttering sounds and babbling phrases. The brain becomes really active, learning 10 or more words a day, by 18-20 months. Vocabulary increases to about 900 words at 3 years and to 1,500-3,000 words by age 5.

In these early years, when the brain's ability to acquire spoken language is at its peak, parents should provide an environment rich in communication. Talk to your children, tell them stories, read aloud, repeat sounds, encourage imitation, make new sounds, and sing. Researchers report that such activities increase children's vocabulary and can increase their IQ as well.

The richer the environment and experiences you provide for your youngsters, the more you increase their opportunities to learn at a faster pace and with greater meaning throughout their lives.

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Online Resources

Building Your Baby's Brain, by Diane Trister Dodge and Cate Heroman (1999).

Available from Teaching Strategies, Inc. at www.teachingstrategies.com/content/pageDocs/buildingbaby.pdf.

Scientific Learning, Inc., www.brainconnection.com

Better Brains for Babies, www.fcs.uga.edu/bbbgeorgia

BrainNet for Parents and Caregivers, www1.dshs.wa.gov/esa/dccel/bnmain.shtml

U.S. Department of Education – Especially for Parents, www.ed.gov/parents