

# Building Baby's Brain: Prime Times for Learning

The University of Georgia/College of Family and Consumer Sciences

Our bodies are designed to have different needs at different times. For example, there is nothing like a cold glass of water when you are really thirsty. Or getting a full night of sleep when you are tired to the bone.

We also know that some skills are learned more easily at certain ages. School-agers are expert at roller-blading after only a few minutes of practice, but grandfathers usually take a little longer. And some adults give up on ever being able to learn how to program the VCR!

## Brain-Building Exercise

We have known for a long time that different parts of the brain control different parts of who we are – our ability to throw a ball, to remain calm under stress, to figure out an algebra problem, or to play the piano. We can help (or hinder) the development of different parts of our brains by how we “exercise” it.

Consider the case of muscles. Our brain, like our muscles, becomes stronger when we exercise. If we only run, our leg muscles grow stronger than our arm muscles. If we only watch TV and never talk, nerve connections in the part of our brain in charge of speaking will actually shrink!

## Prime Times for Brain Development

New research in brain development shows that we learn certain skills most easily during particular “windows

of opportunity.” These are times – a few weeks or months when a part of the brain absorbs new information more easily than at any other time in life. Not surprisingly, most of these windows open and close during the critical first few years of life.

These windows are “prime times” for learning because each part of the brain actually grows a little larger, and a lot more active, in response to what the five senses absorb.

What are some of these prime times for learning? Here are some guidelines:

- **Visual development: birth to 4 years.** During this time, babies need to see shapes, colors, objects at varying distances, and movement. All these images help shape the brain's ability to recognize and organize visual information. The brain actually learns to see! For this reason, anything that interferes with clear vision, such as cataracts or near-sightedness, should be corrected early.

- **Language development: birth to 10 years.** Babies are born with the ability to learn any language. Of course, they understand and babble in the language that they hear the most (including accents). Generally, the more talking, singing, and reading that a baby hears, the more words she will understand and use. Babies also learn the syntax of language, which is the way that sentences are constructed to make sense. Since the prime time for

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language learning is the first few years of life, babies are also able to learn second or third languages much more easily during this period.

• **Emotional attachment: birth to 18 months.** Recent research shows that a person's IQ predicts only a small part of career performance – emotional intelligence predicts about 80 percent of your career success. The part of the brain that regulates emotions, called the amygdala, learns very early how to be a “good citizen.” This means that emotions such as empathy, happiness, hopefulness, and sadness are shaped by how the infant is nurtured. The amygdala continues being shaped through adolescence, but early experiences (as well as inborn tendencies in temperament) are very important in regulating the brain's emotional wiring.

• **Music and math skills: 1 year to 5 years.** Research has shown that the cortex, the area of the brain that hears music, is the same area that does mathematical calculations. Much has been made of the value of exposing infants to rich, complex music. Such music seems to help wire the brain not only for understanding music, but also for improved spatial reasoning that math requires. We also know that the earlier a child studies a musical instrument, the more of his cortex is devoted to playing it. So, if you want your child to excel in math, don't overlook his music lessons as well!

### What Can You Do?

First, and most important, do not feel guilty because you may not have taken maximum advantage of this information when your child was younger! All of us continue learning throughout life. Just think of all the fantastically gifted musicians, athletes, caregivers, and scientists whose parents never knew any of this research.

As you interact with young children, recognize their immense capability to absorb everything around them.

Since the early windows of learning are so important, it becomes even more critical to provide the best environments possible for our future generations. Remember: the first years last forever!

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