

Your Child's Amazing Brain

Your child was born with many billions of brain cells! These brain cells, called neurons, must connect with other neurons in order to work. The connections are called synapses. Your child's brain forms a network of trillions of these connections for learning during his first few years. You can make a difference in the way your child's brain grows!!

How your child's brain works

- The stimulation your child's brain needs to develop comes from the experiences she gets from the world.
- A fatty layer called myelin covers neurons. It helps information travel quickly and smoothly along pathways in the brain.
- Brain connections for some skills (breathing, sucking, hearing) are already set by birth.
- Abilities like walking and talking develop over time when patterns of brain connections have been stimulated.
- Brain connections for learning work better every time a new skill is repeated.
- A loving attachment helps your child's brain development.
- Your child's brain potential depends mostly on the genes she inherited. How her abilities and talents develop depends on the ways you and your care provider stimulate and nurture her.

How you can help

- Feed, hold, touch, and talk to your child lovingly everyday.
- Feed yourself and your child a well-balanced diet.
- Guard your child against brain damage from head injury, lead poisoning, and poor nutrition.
- Talk, read, sing to your child. Show her how to do things.
- Help your child practice new sounds, words, and body movements over and over.
- Meet your child's needs quickly and warmly so that she will feel happy, loved, and safe.
- Provide a stimulating environment with wonderful sights, sounds,

Parents,

This information is provided to you today on behalf of a special visiting program your care provider is taking part in. If you would like to receive similar visits and learn more about how your child grows and develops, please contact your local Parents as Teachers program, call 1-866-PAT4YOU to find a program in your area, or visit our website at www.patnc.org



Your Preschooler's Thinking Skills

Isn't your child amazing? Have you noticed how the quality of her thinking has changed as she has gotten older? Have you noticed how she can remember and recall events that happened weeks or months ago? What could be happening in her young brain to cause these new thinking skills to emerge?

Forming new connections. Brain cells, also known as neurons, are shaped something like a tree. One end of the cell has many, many branches called dendrites. During the years just before a child enters school, dendrites go through a growth spurt. It is thought that this over production of dendrites and connections is what permits your child to be such a spectacular learner.

Making thought efficient. Having so many connections can slow down the process of thought. Knowing this, the brain begins to reinforce some of the connections between brain cells. Connections are reinforced by repeated and extended experiences that occur over time. As some connections become more efficient and faster, others disappear because they are not used. Beginning somewhere between ages 4 and 8, connections are eliminated faster than new ones are produced. This happens until your child's brain function becomes efficient and ordered.

Myelination is another reason your child's brain becomes more efficient and new thinking skills emerge. To conduct the small electrical charges that stimulate brain cells, the axons of those cells must be covered with myelin, a substance composed of fat

and protein. This process is called myelination. As a result of myelination:

- Your child's actions and thinking become more automatic.
- Her movements become more coordinated and fluid.
- Her small motor abilities improve, paving the way for hand and finger skills necessary for school readiness.

Different areas of the brain mature. Another important factor in your child's intellectual and emotional development during the preschool years is the development of the prefrontal cortex and the corpus callosum areas in her brain. The prefrontal cortex:

- Plays a critical role in language, short-term memory, attention, remembering where and when something was learned, and self-control.

The corpus callosum allows information to flow from one side of the brain to the other. Because of this information exchange between the two sides of the brain:

- Your child is much more aware of her own perceptions.
- She develops the ability to see things from another person's perspective.
- She relies less on how something looks, and more on what is logical.

During the preschool years, your child's thinking skills will change dramatically. As you watch new developments take place, remember that you play an important role in her brain development.

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