

Building Your Baby's Brain

**A Parent's Guide
to the First Five Years**

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This project was supported under the Educational Research and Development Centers Program, PR/Award Number R307A960004-98, as administered by the National Institute on Early Childhood Development and Education, Office of Educational Research and Improvement, U.S. Department of Education. Any opinions, findings, or conclusions are those of the authors and do not necessarily reflect the views of the University of North Carolina, U.S. Department of Education, or any agency of the U.S. government.

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Editor: Emily Kohn

Illustrations: Sally Springer © 2001 by Sally Springer

Illustration on page 3 by Catherine Stine

Graphic Design: Sheryl Kagen

Published by:

Teaching Strategies, Inc.

P.O. Box 42243

Washington, DC 20015

www.TeachingStrategies.com

800-637-3652

Printed and bound in the United States of America

First Printing: 1999

Second Printing: 2001

ISBN: 1-879537-41-9



Introduction

Are you expecting your first child?

Are you the parent of an infant? a toddler? a preschooler?

Have you been hearing or reading about brain research?

Do you want to learn what this research means for your child?

If you said “yes” to any of these questions, this book is for you. It tells you what scientists know about your baby’s brain—and why you should care.

You will find that things you never dreamed would help build your baby’s brain in fact *do* make a difference. And *every* parent can make a difference. It doesn’t matter how much money you have. Where you live. Or how much time you spent in school. You don’t need to be an expert or read lots of books. All parents can help their baby’s brain to grow.

Scientists know that the first five years of life are very important for building a baby’s brain. And that’s exactly what you—parents, grandparents, caregivers—do every day. In fact, everything you do and say can help to “wire” your child’s brain—for thinking, feeling, moving, and learning. These are the years when you can make a big difference in your child’s development—and your child’s future.

Children grow and develop at different rates. Some children have special needs that require special help. All children need the love and support of a few key people in their lives—most especially their parents.

So we invite you to take a journey with us as we tell you what scientists know about these very important topics:

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Your Baby's Brain

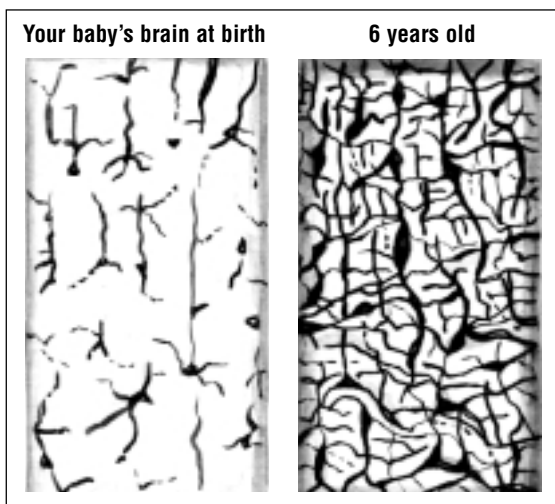
At birth, all of your baby's organs—the heart, lungs, kidneys—are fully developed, but smaller than an adult's organs. All except one—the brain.

The Brain Builds Itself

Can you imagine living in a country where every home had a telephone, but only a few phones had wires to connect them? The phone system wouldn't work. This situation is like your child's brain at birth. Between the sixth week and fifth month of pregnancy, your baby's brain grew about 100 billion cells! Some of these brain cells are connected at birth, but most are not. During the first five years of life (and afterwards at a slower rate), your child's brain is hard at work connecting these brain cells.

Have you ever noticed what happens when you walk through deep snow or through tall grass over and over, along the same route? You make a path. Something like this happens as the brain develops. Each time your baby uses one of her senses—seeing, tasting, touching, hearing,

and smelling—a connection or path is made. When your child has different kinds of experiences, and these experiences are repeated over and over again, the connections in the brain become stronger. These connections shape the way your child thinks, feels, behaves, and learns.



By about age three, the brain has made many more connections than it will ever need. Just as you might cut back the branches from a tree so that the roots grow stronger, the brain gets rid of the connections that are rarely used. The brain keeps only the important connections.

Windows of Opportunity

Scientists tell us that there are times when certain parts of the brain can learn new information more easily than at other times. They call these times *windows of opportunity*. Some of these windows open and then close during the first few years of life. For example, the connections for sight must be made in the first three or four months. If they are not made during this time, they are lost forever. This means the child will *never* be able to see. (We'll talk about how to prevent this from happening on page 7.)

Other windows may remain open longer, but learning is easier at certain times. Scientists call these *sensitive periods*. For example, the first five years are the prime time for learning language. This does not mean that children will learn all there is to know about language by age five. Learning continues to take place throughout life. Although it takes 15-20 years for your child's brain to fully grow and develop, some things are just easier to learn at certain times than at others.

Feeding the Brain

There are many ways to “feed” your child's brain! When you talk or read to your child, play or sing with him, touch him, and nourish him with healthy food and love, you are actually “feeding” that very central organ: the brain.

All children need the kinds of experiences described in this book to help them grow and develop in healthy ways. If your baby was born too early or with a disability, it is especially important to provide experiences that feed the brain. Talk with a health care provider to learn what special help your baby needs.



Before Your Baby Is Born

From the beginning of a pregnancy, a baby's brain begins to grow. To help your baby's brain cells—all 100 billion of them—be healthy and ready to do their job, you need to take care of yourself while you are pregnant.

Taking Care of Yourself Builds Your Baby's Brain

While you are pregnant, you support your baby's healthy brain development when you:



- eat foods that are good for you—green vegetables, fruits, grains, dairy foods
- get daily exercise—just walking each day is good for you and your baby
- have regular check-ups with a health provider—ask about taking vitamins
- get help if you are feeling a lot of stress—your baby needs a calm environment

Doing these four things helps to build a healthy brain for your baby.



There are also some things you should definitely not do while you are pregnant. An unborn baby's brain can be damaged if the mother:



- *drinks alcohol*
- *smokes cigarettes*
- *takes drugs such as marijuana or cocaine*

Avoiding these three things during pregnancy helps protect your baby's brain.

Your Unborn Baby Already Knows You

Here is surprising news. Before your baby is born, she is already getting to know you! When you feel your baby move, try stroking your belly. Your baby will play “hide-and-seek” with you—moving away from your hand.

Talk to your unborn baby. It may feel strange at first, but your baby can actually hear voices. Pick a song you like and sing it to your baby every day while you are pregnant. After your baby is born, watch how she can pick out her mother's or father's voice from other voices. Sing the song you have been singing and see if she listens and even calms down.

Building your baby's brain begins long before your baby is born. And building a relationship with your baby starts before birth as well.



Making Sure Your Baby Can See

What Scientists Know

In the first few months after birth, the part of the brain that controls vision is being “wired.” The wiring connections can only be made properly if your child sees clearly and the eyes are straight during this first year of life. Problems such as infant cataracts (a clouding of the lens), crossed eyes, or one eye that doesn’t focus, will prevent the brain connections for vision from being made.

Most of these problems *can* be corrected. Sometimes a simple patch, glasses, or surgery is needed. If the problem is *not* found and corrected, your child may lose the ability to see.

What You Can Do

Earlier is better when it comes to making sure your baby can see. The most important step that you can take is to be sure the doctor checks your newborn baby’s eyes. Your baby will be given a *red reflex test*. The doctor will repeat this same test when your baby is about six months old.

Another test your baby will have at six months is a *corneal light reflex test*. This test shows whether your baby has a lazy eye (an eye that is slightly crossed). Once again, if there is a problem, the doctor can take steps to strengthen your baby’s eyes so they focus in the same direction.

What else can you do to help your baby see? Basically, the things your child sees in and around your home are all that he needs to help his sight develop normally. When your baby looks at your smiling face, a tree blowing in the wind, the patterns on your clothing, or a dog jumping and running for a stick, he is getting the kinds of experiences he needs for his sight to develop.





Touching Your Baby

Babies and young children need to be held and cuddled. But did you know that touch is also important for your baby's brain development?

What Scientists Know

Every time you hold and gently touch your baby, a message is sent to his brain and a connection is made between brain cells. These connections make it possible for your baby to talk, see, feel, move, and learn.

When you touch your newborn baby, you are teaching him that he is loved and wanted. Studies show that gentle touching helps to calm a baby and reduces stress. A baby who is calm can take in the sights, sounds, textures, and smells around him. And these experiences build connections in his brain.

What Health Care Providers Are Learning

Many health care providers are discovering that infant massage promotes healing and growth. If your baby was born early or with a low birth weight, regular touching can stimulate his appetite. It enables him to gain weight more rapidly and to grow. If your baby has colic, touching may help ease the pain and make him more comfortable. A baby with special needs, such as a heart problem, may do better if given regular infant massages by an expert. This person can also teach you how to do this kind of massage for your baby.

What You Can Do

Make time each day to spend gently touching your baby. Talk with her as you gently stroke her arms, legs, back, belly, feet, and toes. "I'm stroking your legs, now your arms." Touching and talking helps her learn.



It's also important for fathers to touch, hold, and cuddle their babies. The more fathers hold and spend time with their babies, the stronger the bond they build, and the more comfortable they are with their babies.

Take time to find out what *your* baby likes. Keep in mind that each baby is different. Some are sensitive to touch and may respond better to being wrapped securely in a blanket and rocked. Some babies need to be stroked gently. Others respond better to a firmer touch. Watch and see how your baby responds to different kinds of touch. What seems to calm her? What makes her smile? What upsets her? Don't be concerned if your baby doesn't respond as you would expect. You will soon discover the kind of touch your baby likes best.

Children never outgrow their need to be touched gently and often. Touching helps your child feel secure and calm so that she can continue to learn and grow. When you take the time to hold and hug your child you will feel a special closeness. And you may even find that you feel calmer and healthier yourself.



Teaching Your Baby About Feelings and Self-Control

Do you know people you think are smart about feelings or tuned in? They can tell you how they feel. They seem to know how others are feeling, too. Tuned-in people also know how to control their own strong feelings, like anger, so they don't have to act on them.

People who are smart about feelings are said to have *emotional intelligence*. Why is emotional intelligence important? Children with emotional intelligence are more likely to feel comfortable and enjoy school. They seem to get along with others. They usually feel liked and accepted. They know how to work well in a group. They are less likely to lose control and have behavior problems.

Teaching your child about feelings and self-control starts in the first five years of life. That's when parents can really make a difference.

Being in Tune

You can teach your baby about feelings by being in tune. Scientists call this *attunement*. Being in tune means that you know what your baby is feeling and you let him know that you know. When you do this, you help build the connections in his brain that produce those feelings. You are wiring his brain for understanding feelings and for thinking. You are building emotional intelligence.

To be in tune, you have to be a good observer. As you watch what your baby does and listen to what he says, you can ask yourself:

- What is he feeling right now?
- How should I respond?
- How can I let him know I understand?



Being in tune with your baby is like being a mirror—reflecting back what you think your baby is feeling. Here are some examples of what you can do and why these things are so important.

<i>If your baby</i>	<i>You can</i>	<i>Why this is important</i>
Smiles at you.	Smile back, nod your head, talk to your baby.	This teaches your baby how to relate to others and how much you love her.
Is surprised by a sudden loud noise and cries out.	Hold her, pat her gently, say, “What a big noise. Don’t worry. I won’t let anything happen to you.”	This shows your baby that she is safe and you understand how she feels.
Gets excited about seeing a puppy.	Show that you are excited also and say, “Oh look at the puppy! He’s so cute!”	This encourages your baby’s interest in exploring the world and strengthens feelings of joy.
Sees a stranger (someone you know) and screams in fear.	Stay with your baby, reassure her, introduce her to the person.	This helps her learn to trust others and overcome her fears about new people.

As your child gets older, you can talk more about feelings so he learns the words to say what he feels. Children who learn to use words instead of their fists when they have strong feelings are developing self-control. They know how they feel and can let others know without acting out. Here are some examples.

<i>If your child</i>	<i>You can</i>	<i>Why this is important</i>
Cries when you take him to child care.	Stay a few minutes. Help him find something to do. Say, "You will be safe here. While I'm gone, Vilma will take care of you. I'll be back to take you home."	Your child needs time to feel comfortable in a new place and to trust that you will come back to get him.
Proudly shows you a picture he drew.	Take time to look at it and comment. "You worked hard on that picture. Tell me what you like best."	This builds your child's self-confidence and invites him to talk about what he made.
Throws sand at a child who tries to take his shovel.	Say, "No. You may not throw sand. Throwing sand can hurt. Tell Anna, "I'm playing with the shovel. You can play with it when I'm done."	You are helping him to develop self-control and giving him the words he needs to stand up for himself.

A Secure Baby Is Learning Self-Control

Babies who feel safe and secure are beginning to learn self-control. The care you provide for your baby teaches her that the world is a safe and interesting place. Responding when your baby needs you, staying calm, and being loving can help her to feel secure.

Remaining calm and loving is not always easy. Every parent has at times felt stressed, angry, and annoyed. But if you take out your anger on your baby by screaming, handling her roughly, or ignoring her needs, she can become very scared. If this happens a few times, it may not damage your baby. But if this happens often, it can actually change your baby's brain and put her at risk.

Stress and fear produce a chemical called *cortisol* which can destroy brain cells. A child who has had many of these frightening experiences may have trouble in school relating to others, paying attention, thinking, and learning. Every child needs loving care to feel secure and develop well.

Firm and Loving Guidance

Children also need guidance. They develop self-control if they are around adults who love them and firmly teach them which behaviors are OK and which are not. How do you do this? Here are some important steps you can take.

- Make sure your child is safe. Be ready to stop any behavior that is not safe. “No climbing on the table. You might get hurt.”
- Tell your child what she can do. “If you want to climb, you can climb on the couch.”
- Be a role model for your child. Keep in mind that children often imitate how adults behave—the good and the bad.
- Set clear limits and have simple rules. Children feel safer when they know what is expected of them.
- Use “No” as little as possible. Explain your reasons in simple language.
- Give choices. “You can’t throw toys. You *can* throw this ball or the bean bag. Which one do you want?”
- Plan interesting things for your child to do. A child who is busy playing will be less likely to act out.



No matter how angry or frustrated you might be, you must never ever shake your baby. Shaking can damage your baby’s brain forever, and even kill your baby. Losing control and taking your anger out on your child can leave permanent scars if it happens often. Find a family member, a friend, or a health professional who can help you regain your own control.



Relating to Others

All parents want their children to relate well to others: to have friends, to get along, and to care about other people. The very first people children learn to relate to are their parents. The relationship mothers and fathers build with their children helps to form a foundation for other relationships in life.

What Scientists Know

Beginning at birth, your baby starts to develop what scientists call *social attachment*. This simply means that your baby grows to love you.

Research shows that children who form strong social attachments to a few very important people early in their lives are more likely to relate well to others as they grow up. They tend to be more curious and to do well in school. They are frequently better able to handle stress and are less likely to have behavior problems. They get along well with other children and tend to be happier people. Attachment to a few important people is what prepares a child for a lifetime of learning.

Teaching Your Baby to Trust

The first lesson your baby learns about relating to others is that there are certain people she can trust. You teach your baby to trust when you respond to her needs.

- When your baby cries with hunger, you feed her.
- If she is uncomfortable, you change her diaper or pat her gently on the back to relieve a gas pain.
- When she wants to play, you are there to play with her.
- When she is tired and fussy, you help her relax and go to sleep.

A baby who trusts is able to explore and learn because she knows she has a safe base to return to—you!

You Can't Spoil a Newborn

Some people worry that they will spoil their baby if they always respond as soon as their baby cries. There's no need to worry. You can't spoil a very young baby with too much attention. Babies need what they need when they need it! Because you meet their needs, babies learn they can depend on you. This is how your baby learns to trust. This is how social attachment grows. And the first year is the most important one for building this bond with your child.

The Social Dance

You teach your child about the give and take of relating to others by being playful. Experts call this a *social dance*. Your baby does something and you respond. He does it again and you repeat the sound or action. This little dance goes on and on until your baby gets tired and turns away or shuts his eyes. That's his way of letting you know he is not interested anymore. It's time to stop for a while. Before long, your baby will start the game himself and invite you to play again.



Here are some examples of how this social dance works.

- You hold your baby, open your mouth and wiggle your tongue. Your baby watches, and then imitates you.
- Your baby says, “Dadada.” You look at him and repeat the same sound. Then wait for him to say it again.
- You cover your eyes, uncover your eyes and say, “Peek-a-boo” with great surprise. Your baby squeals with joy. You do it again.
- You shake a set of keys and your baby grabs for them. You encourage his interest in exploring the world around him.
- Your baby is delighted by a bright red ball. He rolls it towards you and you roll it back. The game goes on for several minutes.

As your child grows and develops new skills, she often wants you to play with her. Playing together is how your child learns about the give and take of relating to others. Take time every day to do things like these.

- Play make-believe games—going on a picnic, playing school, taking the baby doll to the doctor, putting out a pretend fire, setting up a gas station.
- Have your child help you with tasks such as preparing dinner and sorting the laundry.
- Go for a walk and collect leaves, count the cars, talk about their colors.
- Look at books together and tell stories.
- Talk about what you each did during the day.
- Visit a playground and play together in the sandbox.
- Make or take pictures for a family album and talk about the pictures.
- Play board games.

Teaching Your Child Empathy

Empathy means understanding and caring how others feel. You began teaching your child empathy when you responded to her needs promptly and lovingly from the time she was born. Having comforted your child when she was unhappy, you are likely to find that she does the same for you. She may come over and pat your back when she sees that you are upset, or hand you a favorite toy or blanket for comfort.

You can teach your child how to recognize feelings in other people and to care about what others feel. For example, when another child is upset you might say, “Look at Marta’s face. She is angry. Let’s see what made her mad.”

Helping Your Child Make Friends

Even when your child is very young, you may see signs that she knows how to make friends. She may copy something another child does to get his attention. She might hand another child a toy as if to say, “I want to play with you.” Encourage these behaviors. Arrange times for your child to play with other children. Try to have extra toys and materials so sharing isn’t a big problem. That will help your child to play more successfully with others.

Before too long, your child may be going to school. It might be called child care, Head Start, preschool, or pre-kindergarten. Your child will be much happier if he knows how to make friends. All the social skills you have taught him are ones he can use to make friends with other children. And the preschool years are an important time for learning how to relate to other children.

Children Who Don’t Respond as You Expect

Some children, because of a disability or special need, may not respond to their parents as expected. They may be very sensitive to touch and not want to be held. They may cry a lot. They may not look at the person who is talking. If this happens with your child, don’t blame yourself or your child. There may be a problem that a specialist can identify. If you sense that something is not right, make a list of your concerns. Bring the list with you when you talk to your child’s doctor. Ask questions until you get answers.

If you are worried, find a professional who will help you sort out your concerns. If your child is over three, you can contact your school district for help. Early intervention services exist in most communities. If your school system does not provide these services, they or your health care professional should be able to refer you to the agency that does. If there is a problem and it is identified early, you can often get the help your child needs.



Talking and Listening

What Scientists Know

Scientists tell us that a sensitive time for the brain to build the connections for language is during the first five years. The more words your child hears, the more words he will soon understand and learn. Children who know and use lots of words are more likely to become good readers.

What Kind of Talking Matters

Children learn language from being with people who talk to them and listen to them, not from watching TV. Talk a lot. Say out loud what you are doing. Use as many different words as you can to say the same thing. For example, “The dog is big—huge—large—gigantic.” Recognize that saying “don’t touch” or “stop that” doesn’t teach your child very much. Instead, try to be positive and use lots of words: “Let me give you something safe to play with. We can play with this red ball. I’ll roll it to you and you roll it to me.”



In some families, the parents or close relatives speak two different languages. Parents wonder what language they should teach their child. Research says that family members should speak whatever language they speak the best. Your child needs to hear language spoken well. A very young child who hears two languages spoken from birth can learn them both.

Talking with Your Baby

There is a special kind of talk called *parentese*. It's the way parents talk when they use simple language, put lots of expression on their faces and in their voices, and speak slowly in a sing-song voice. Watch how your baby pays attention when you speak parentese!

When you talk to your baby all the time, you give her a head start on talking and listening. Even though she may not understand what you are saying at first, her brain is building the connections for language. Get close to her as you talk so she can watch your lips. When she coos and babbles, show excitement! This will often get her to talk more. Play games like "peek-a-boo" and "patty-cake." These games teach the give and take of talking with others. Talk to her throughout the day as you feed, bathe, or change her diaper. Talk about what you are doing: "Now we're putting on your red shirt" or "Let's wash your hands." Remember, it's hearing the *sounds* of words that wire her brain for language, even before she learns what the words mean.

Talking with Your Toddler

You don't need to have a big vocabulary when talking to your toddler. All your words are new to him! He may learn new words as he hears you tell stories, read, and when you play with him. And toddlers love to repeat words over and over and over again!

Your toddler will probably begin talking in one- or two-word phrases, like "doggie" or "me cup." You can help by giving him the words to use. "That's a big doggie." "Oh, you want your cup? Here it is. I'll pour some apple juice for you. Won't that taste yummy?"

Give your toddler the words he needs when he is trying to tell you his feelings. If he gets angry, let him know you understand, even if you can't do what he wants. "I know you're angry because you wanted to ride the merry-go-round one more time, but we need to go. We can come back another day." Talking about feelings helps your toddler learn to deal with his emotions.

Talking with Your Preschooler

Talk and listen to your child as much as possible. Think of different ways to say things. For example, in talking about a rainy day, use words like *wet*, *drippy*, *dreary*, and *cloudy*. This helps your child learn new words.

Show your child how to be a good listener during these conversations by the way you listen to what she says. Describe what you see and ask questions that will get her to talk to you. Here are some examples:

- “Look at all these acorns under the tree. Should we collect some? What should we put them in?”
- “I wonder when your sister will come out of school. Where should we wait for her?”
- “You made a lot of pictures today. Tell me about them.”

Teach your child some nursery rhymes or silly sayings. Preschoolers love to play with words and rhymes. Children who can play with language are developing the skills they need for reading. Here are some suggestions.

Change the words to a familiar song, such as **BINGO**, and use your child’s name in it.

There was a boy who had brown hair
And Sammy was his name—O
S-A-M-M-Y, S-A-M-M-Y, S-A-M-M-Y
and Sammy was his name—O!

Repeat the song using the names of family members or friends.

You and your child can have fun by changing the words of nursery rhymes to make them really silly:

- Baa, baa **green** sheep
- Twinkle, twinkle little **car**
- Humpty Dumpty **went** to the **store**
- The eensy, weensy spider went **into my shoe**
- Mary had a little **pig**



To learn language, your child needs to hear well. Ask the doctor to check your child’s ears to see if there is anything, such as an ear infection, keeping her from hearing. Too many ear infections can cause some delays in language development.

Be sure to let your doctor know if:

- *your baby doesn’t turn towards your voice or make babbling noises by six months, or*
- *your child is not saying any words by age two.*



Sharing Books Together

When you read to your child, his brain cells are turned on and begin to make connections. As he looks at the picture on the page and hears the words you are reading, his brain is hard at work. And if you can talk about how the story is like something in your child's life, that's even better. Hearing favorite stories over and over also helps strengthen brain connections.

Sharing Books with Your Baby

It's never too early to introduce books to your baby. Most babies enjoy being held and playing with the book as they listen to the sounds of the words. From the very earliest years, your baby will learn that looking at books is enjoyable and special. Here are some tips for sharing books with your baby.



- Give her cloth or vinyl books that can be washed.
- Hold her in your lap and circle your arms gently around her as you read or talk about the pictures in a book.
- Do something different when she loses interest. Babies have a short attention span and may enjoy books for only a few minutes at a time.

Sharing Books with Your Toddler

Make story time a special part of your everyday activities. Toddlers usually enjoy short, simple books. They often ask to hear a story over and over again. Here are some ideas.

- Choose books on topics that will interest your toddler. Does she love trucks and cars? Animals? Books about everyday routines?
- Find sturdy, cardboard books for your toddler to handle. Let her help you turn the pages.
- Change your voice to imitate the characters during storytelling.
- Try to involve her in talking about the story. For example, suppose you are going to read Margaret Wise Brown's *Goodnight Moon*. Here's what might happen.

Book	Involving Your Child in the Book
<i>Goodnight Moon</i>	<p>You: Do you want to hear <i>Goodnight Moon</i>? I love this book.</p> <p>Your Child: Moon!</p> <p>You: Yes, there it is. What else do you see?</p> <p>Your Child: Cow.</p> <p>You: You're right. There's a picture of the cow jumping over the moon! Will you help me turn the pages?</p>
<p>In a great green room There was a telephone And a red balloon And a picture of-----</p>	<p><i>You pause while your child points to the objects as you read the words.</i></p> <p>Your Child: Cow! 3 bears!</p> <p>You: I see those pictures. What else was in the green room?</p> <p>Your Child: Clock...bowl...mouse (points and names the rest of pictures of things in the room).</p>
<p>The cow jumping over the moon.</p>	<p>You: Do you think a cow can really jump over a moon?</p> <p>Your Child: No-o-o-o-o! (Shaking head and laughing)</p>

You continue to read the book and talk about the pictures as you read. Have your child find the mouse on every page. At the end of this bedtime story, say goodnight to different objects in your child's bedroom. "Goodnight bed. Goodnight chair. Goodnight baby doll. Goodnight books."

Sharing Books with Your Preschooler

Your preschooler will often still enjoy climbing on your lap to listen to a favorite story. Although you may be tired of reading or telling the same story over and over again, repeating helps make strong connections in the brain. Soon your preschooler will tell you the story, word for word! Here are some other ideas.



- Visit the library regularly and check out books. Most libraries have storytimes especially for preschool children. Perhaps you can check out a book for yourself and show your preschooler how you enjoy a good book also!
- Create your own story-time routine. This could be at bedtime or at another time during the day. Find a comfortable place where you can snuggle up and read or talk about a book together. Do it every day!
- Use expression in your voice when you read or tell the story.
- Choose books and stories that have rhyme and repetition, like *Brown Bear, Brown Bear, What Do You See?* (Martin) or Dr. Seuss books, such as *Green Eggs and Ham*. Encourage your child to join in the story with you. Soon you might see your child pretending to read or telling the story to a stuffed animal or doll.
- Lightly run your fingers under the words as you read. This teaches your child that the print stands for words and that we read from top to bottom of the page and from left to right.
- If your child has a language delay, ask him to point to pictures and encourage him to repeat the words after you.

Research shows that *how* you share books with your child is even more important than how often you do it. Your questions or comments can help your child become the teller of the story. For example, if you were reading the story *The Gingerbread Man*, here are some comments and questions you might ask:

Kind of Question or Comment	Example
Completion – Leave off a word at the end of a sentence and let your child fill it in.	“Run, run as fast as you can. You can’t catch me. I’m the Gingerbread ____.”
Open-ended – Ask your child a question that will make her think of several different answers.	“What do you think the Gingerbread Man is doing in this picture?”
Who, What, When, Where, Why, and How – Ask your child these kinds of questions about the story and the pictures.	“Who baked the Gingerbread Man?” “What did the little old man say when the Gingerbread Man ran away?” “Where did the fox want the Gingerbread man to go?” “Why do you think the fox wants the Gingerbread man to ride on his head across the river?” “How did the fox trick the Gingerbread Man?”
Connections – Help your child see how the story relates to something familiar.	“Do you remember when you ate gingerbread at Aunt Pat’s house?”

Encouraging Reading and Writing

Words are everywhere. You can use this fact to help your child get ready for reading.

- Young children are interested in their own names. Let your child see you write his name. Put magnetic letters on your refrigerator for him to play with and spell his name. You may see your child point to letters in words and say “That’s my letter!”
- Talk about the words and letters you see every day. Point out stop signs or signs on familiar stores. Talk about the name on a box of cereal as you take it off the shelf.

- Let your child see you looking at books, magazines, and newspapers. When he sees you reading, he may try to copy you. These experiences teach your child why we read and that reading is important.



There are also many ways you can encourage writing.

- If your child is playing house, give him paper and pencil to scribble a shopping list or take a message.
- If he is making a fort in the living room, offer paper and crayons to scribble a “Do Not Enter” sign.
- If you are outside, he can write in the dirt with a stick or on the sidewalk using chalk.
- If he copies what you do every day, have paper and pencil or crayons for him to “write” a shopping list, a phone message, or a letter to a friend.

Remember, however, that writing develops over time. At this point, don’t worry if your child scribbles or makes letters backwards or upside down.



Music and Math

What Scientists Know

Listening to and making music form strong connections in the brain. These are the same connections that are used to solve math problems. So enjoying music together now can help prepare your child to learn math later in school.

Sharing Music Together

Most likely your child will love to hear you sing. It doesn't matter what your voice sounds like. Sing to your baby as you hold him. He will feel the vibrations of your body and hear your voice. Singing songs over and over will help prepare his brain for listening and speaking. Soon he'll try making sounds on his own, like cooing and babbling.



Your toddler will sway, clap, bounce, and move her body when you play music. Make up songs about things you do every day. Pick familiar tunes and use her name in the song. Look for things around your home, like pots or wooden spoons, that she can use to make music.

Preschoolers love silly songs and playing with words. They will sing, march, dance, and even make up their own songs. What's most important, though, is that you make music together. This can help your child with learning, and it can also create a bond that will last a lifetime.

If you're not sure what kinds of songs to sing, listen to music on the radio. Public TV stations also have lots of good children's music. Try to remember songs you sang when you were growing up. You can probably think of many songs, but here are a few to jog your memory.

Ballads and Folk Songs

- Clementine
- On Top of Old Smokey
- You Are My Sunshine
- Are You Sleeping?
- Row, Row, Row Your Boat
- I've Been Working on the Railroad
- She'll Be Comin' Round the Mountain
- A Ram Sam Sam
- If I Had a Hammer
- The Crawdad Hole
- Take Me Out to the Ballgame

Songs in Spanish

- A la Rueda de San Miguel
- Arroz con leche
- Nanita, nana
- El patio de mi casa
- Naranja dulce
- Pinpón
- ¡Que llueva!

Silly Songs, Jump Rope Songs and Clapping Rhymes

- Bringing Home a Baby Bumblebee
- The Ants Go Marching One By One
- Down By the Bay
- The Hokey Pokey
- Old McDonald Had a Farm
- Twinkle, Twinkle Little Star
- Itsy Bitsy Spider
- This Old Man
- There Were Ten in the Bed
- Miss Mary Mack, Mack, Mack
- The Lady with the Alligator Purse
- Hey, Come On Playmate
- The Bear Went Over the Mountain
- BINGO
- The Wheels on the Bus
- Farmer in the Dell
- The Muffin Man
- If You're Happy and You Know It

Think about other songs you might know.

- Songs about your country
- Popular songs
- Songs from movies or musicals
- Lullabies

Music and Children With Special Needs

Music is so important, it should be part of every child's life. A child with special needs can still enjoy and benefit from music.



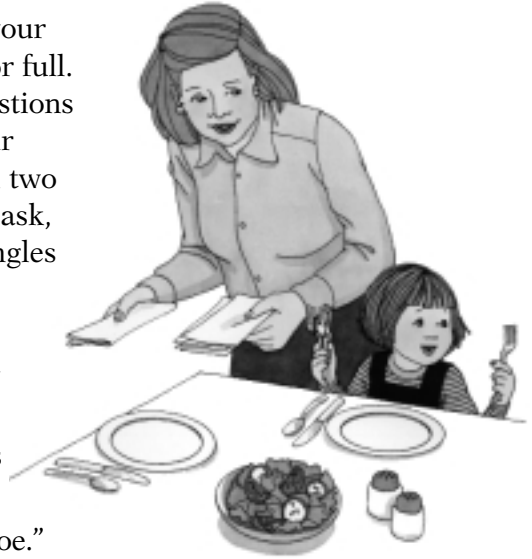
- If your child has a language delay, singing familiar songs is a good way to learn new words. It is sometimes easier to sing songs that have rhythm and repetition than to say some words.
- If your child has a hearing loss, he may not be able to hear the words as clearly as you do, but he can often feel the vibrations and move to the music. Encourage him to clap the rhythm of the song with you.
- If your child cannot see, hold his hands as you move to the music together. Sing songs that ask him to touch his toes or elbows and shake his hands.
- If your child has a physical disability, you can help him to move to the music and enjoy singing together.

Developing Math Throughout the Day

Math is more than counting and recognizing numbers. It's learning about more and less; many and few; heavy and light; long and short. Math also involves learning shapes (circle, square, rectangle); recognizing patterns (red-blue-red-blue); and comparing (which is more and which is less).

There's no need to drill with flashcards to get your child to learn math. And you don't have to be good at math yourself. As you go through the day, there are many opportunities for "math talk."

- At mealtime, talk about your child's cup being empty or full. Ask your preschooler questions like, "Would you like your sandwich whole or cut in two halves?" On another day ask, "Should we cut it in triangles or squares?"
- Let your preschooler help you sort the laundry or match pairs of socks.
- Sing songs or say rhymes that have numbers like "One, Two, Buckle My Shoe."
- Play games like "Mother May I" and ask your child to take *five* giant steps or turn around *two* times.
- When you and your child play with some toy trucks or blocks, say, "Oh, you have so many and I have only a few. And look, your brother Jamal has none. Will you give us more?"
- Count and touch the buttons on your child's shirt as you dress him.
- Have your child help you count *two* apples or *three* bananas at the food store.
- Let your preschooler help you set the table. Have him count the number of people who will be eating. Help him to place a fork, knife, spoon, and napkin for each person.





Moving and Doing

Movement Builds the Brain

The brain connections that control movement are formed during the first four years of life. Learning basic motor skills—rolling over, sitting, crawling, walking, running, reaching, and climbing—is much easier during this time than at any other time in a child's life.

Some ways that your child moves can actually improve her learning! When your baby crawls, your toddler plays patty-cake, or your preschooler dances with scarves, both sides of the brain are put to work. This is important because both sides of the brain are used in many learning skills. So movement can help prepare your child to learn.

If your child has trouble crossing her arms and legs from one side of her body to the other, help her to move her arms and legs so that she uses both sides of her brain.



Making Your Home Safe for Exploring

Children learn about the world through their senses—tasting, touching, hearing, seeing, and smelling. When given the freedom to explore, they can use their senses to make discoveries. By doing simple things—like covering electrical outlets, putting gates on stairs, and putting away anything that can cause injuries—you allow your child to explore in a safe way. These experiences help build strong connections in the brain.



One thing that can hurt your child's brain is eating chips of lead paint. More than half of all homes in the United States contain some lead paint. If your home was built before 1978, it may be in this group. Lead poisoning can cause many learning problems later in school. To protect your child, make sure that the floors and windowsills are cleaned well with a damp cloth or mop. Get rid of any paint chips your child might try to eat. A blood test can tell if your child has been affected by the lead. If you find out early enough, lead poisoning can be treated.



During the first year of life, some babies are at risk for Sudden Infant Death Syndrome (SIDS). SIDS is also called "crib death" because it happens while the baby is asleep. You can help to prevent SIDS by putting your baby to sleep on her back, never her stomach. Use a firm mattress and avoid soft blankets or comforters that might keep your baby from breathing. (During the day when your baby is awake, it is fine for him to be on his stomach. In fact, you want to encourage him to push himself up on his arms to look around. This activity builds strong muscles and helps get him ready to crawl.)

Helping Your Child Develop Physical Skills

In a few short years, your child will go from being held and carried to running and jumping; from holding a rattle to turning the pages of a book. You can encourage activities that help your child learn and use new motor skills. The charts that follow give some examples.

<i>Activities That Build Large Muscles</i>		
<i>Infant</i>	<i>Toddler</i>	<i>Preschooler</i>
<ul style="list-style-type: none"> • Rolling over • Sitting up • Creeping and crawling • Climbing • Pulling up • Standing up • Walking 	<ul style="list-style-type: none"> • Dancing • Riding toys • Pushing and pulling • Jumping • Throwing • Hopping 	<ul style="list-style-type: none"> • Balancing • Galloping • Jumping • Dancing • Riding a tricycle • Throwing

<i>Activities That Build Small Muscles</i>		
<i>Infant</i>	<i>Toddler</i>	<i>Preschooler</i>
<ul style="list-style-type: none"> • Reaching for objects • Holding and turning objects • Picking up small objects • Picking up dry cereal with fingers • Holding and shaking a rattle 	<ul style="list-style-type: none"> • Putting puzzles and toys together • Piling blocks • Using a spoon • Drawing with jumbo crayons • Pouring • Picking up small objects • Turning the pages of a book 	<ul style="list-style-type: none"> • Drawing and writing • Cutting • Stringing beads • Picking up objects with tongs • Building with pieces that snap together • Buttoning, zipping and lacing • Doing puzzles



Play—A Child’s Way to Learn and Grow

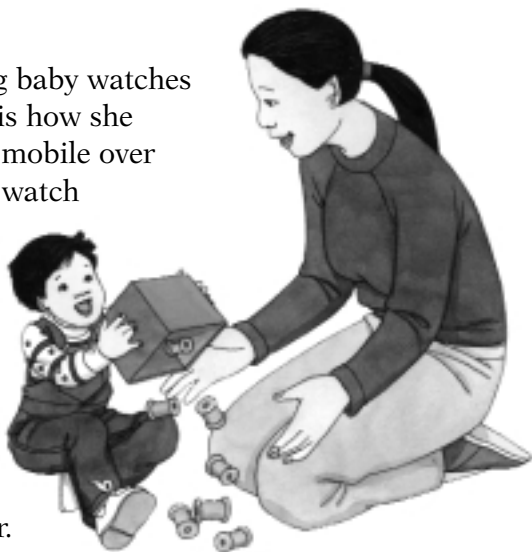
As soon as a baby can focus and reach for things, she eagerly explores her world and tries to make sense of it. She squeezes, rolls, bangs, and puts everything she can get her hands on in her mouth. We call this play, but for a child, it is serious work. Play is how young children learn best. And all kinds of play experiences build your baby’s brain.

How Play Builds the Brain

Every time your baby hears, sees, touches, tastes, or smells something, messages are sent to her brain and a connection is made. The more varied play experiences your child has, the more brain connections are made. And the more your child has a chance to do the same things over and over again, the stronger these connections become. That’s why something new or surprising often gets your child’s attention. And activities she enjoys she may want to keep doing many, many times.

Playing with Your Baby

Notice how your very young baby watches and tastes everything. This is how she explores her world. Hang a mobile over the crib and your baby will watch and track its movements. Give her a rattle or soft teething ring and she will hold it in her fist and suck on it. Your baby will probably love cuddly toys like stuffed animals, and enjoy admiring herself in a mirror.



Once your baby can sit up and crawl, the very best toys are balls, plastic rings and cups, and containers with objects she can put inside and dump out. Babies often enjoy playing with pots and pans from the kitchen, wooden spoons, clothes pins, and empty cardboard boxes. And once a baby starts walking, push and pull toys are a big favorite. When you show your child that you are interested in the things that excite her, you encourage her to keep exploring and learning.

Playing with Your Toddler

Toddlers like many of the same toys—dolls, push and pull toys, stuffed animals—plus simple puzzles and matching games. As your child grows, he will start to use these toys differently. The blocks he once carried around may now be used to build a house. Or, they might become a car moving along a road. Watch your toddler pretend to feed a doll, imitating you.

The ability to make believe is a very important step in your child’s learning. A child who can make believe is able to hold a picture of something in his mind—meaning to think in the abstract. Thinking in the abstract is needed for learning to read and do math. It is something you should encourage and it’s easy to do. All you have to do is make believe with your child. Here are some examples:

<i>If your child:</i>	<i>You can:</i>
Crawls around on all fours barking like a dog	Pat him and say, “What a nice doggy. Are you hungry little dog? Do you want a bone to chew on?”
Puts a doll in a box on the floor	Bring him a blanket and say, “Is it time for your baby to take a nap? Here’s a blanket to cover her so she doesn’t get cold.”
Stamps around the room pretending to be a monster	“What a scary monster. Please don’t hurt me you big monster.”

Playing with Your Preschooler

Between the ages of three and five, your child learns a lot by playing with other children. These are the years to really encourage make-believe play. When your child makes believe, she has to remember different experiences she has had, take on a pretend role, and involve other children (or her family) in her play. She also may use props as part of her play. In fact, one of the best ways to encourage your child to make believe is to provide some simple props. Here are some examples:



- Collect empty cardboard food containers, grocery bags, paper and pencils to make shopping lists, and make some play money to encourage your child to play going to the grocery store.
- Make some instruments out of pots and pans, wooden spoons, and oatmeal boxes filled with beans and play marching music together.
- Offer old clothes, hats, suitcases, plastic dishes, and empty food containers so your child can play house.

Playing with your child is the best way to encourage make-believe play. And research shows that children with good play skills tend to do well in school. Play helps develop thinking skills—recalling experiences, figuring out how to replay them, and solving problems that come up. Play develops social skills as children work together and share ideas.



Art—Another Language

Your child communicates in many ways. She can talk, or use her hands, voice, and facial expressions. Another way your child can express ideas and feelings is through art. Notice how your child's drawings become more realistic and reveal how she views the world.

Art materials provide rich sensory experiences. As your child squeezes and pokes playdough or moves her fingers through fingerpaint, connections are being made in the brain.

Art also helps build thinking skills. When your child sees that moving a blue crayon across a piece of paper will leave a mark, she is learning about cause and effect. She practices problem solving by figuring out, "What am I going to make with this clay?" or "What can I draw on this piece of paper?"



What You Can Do

For young children, the act of creating is important, not what they end up with. Try not to tell your child what to create. Let her learn how to explore and make decisions on her own. Here are some ways you can encourage your child to learn through art.

- Offer different kinds of materials. You don't need a lot of expensive or fancy materials. Just look for things around the house like paper, crayon, glue, fabric scraps, foil, coffee filters, newspaper, egg cartons, catalogs, paper towel cardboard tubes, styrofoam meat trays, string, and yarn.
- Help your child get started. If he seems stuck and can't get started, ask some questions. Suppose he says he wants to draw a dog. You might say, "Let's think about a dog. What's the biggest part of a dog? How many legs does he have?"
- Say more than just "That's so pretty." Try to be specific and describe what your child has done. Talk about the colors he used or what he did.
- Give your child a chance to talk about what he made and how he feels. "Tell me about your picture. How did you decide to draw a giraffe?"
- Display your child's artwork. When you display your child's artwork on the refrigerator or on a wall for all to see, you let him know that you value his creative efforts. This is also great for your child's self-esteem!

Some children seem to dislike getting their hands dirty. They may be very sensitive to touch. Take your time. Don't rush your child. Introduce materials slowly. Remember, art experiences should be fun.



Choosing the Best Child Care

At some point during your child's first five years, you may place your child in a child care or preschool program. This will be a big decision—one you will want to make carefully. Next to family members, caregivers and teachers can do the most to help your child's brain grow and develop during these most important early years. Studies show that there is a link between high quality child care and school readiness. Children not only enter kindergarten more prepared for school, but they seem to do well past kindergarten.

Take the time to ask around, find out what programs in your area are licensed. Plan to visit several places before deciding where to place your child. Spend some time watching the action. Look to see if children appear to be happy and content.

Health and Safety First

Your first concern will be whether your child will be safe and free from harm. If you have an infant or toddler, here are some things to look for:

- Group sizes of three or four with one caregiver, and no more than 10 toddlers with two caregivers
- Separate cribs for each child and a place for children's belongings
- Soft, comfortable carpeting and furniture
- Covered electrical outlets and locked cabinets for any dangerous materials
- Separate diapering and food preparation areas that are clean and safe
- Sufficient number and variety of toys your child would enjoy
- Protected outdoor areas where children can play safely

For your preschooler, here are some signs of a good program.

- Group size of 18 to 20 with two teachers
- Classroom and outdoor areas that are free from conditions that might cause injuries

- Materials and equipment in good repair
- Clean cots or a mat for each child
- A well-organized room with lots of choices for children— books, blocks, art materials, puzzles and toys, dress-up area, sand and water table, and more
- Soft material under outdoor equipment and a fenced in yard with some shade

For all children, there should be written procedures for dealing with emergencies. Also, look for evidence that children practice self-help skills such as washing hands, brushing teeth, setting the tables. Be sure that children are supervised at all times.



The Staff—Most Important

Research shows that the staff makes the difference. The more training and education the staff have, the higher the quality of the program. And a quality program helps to prepare your child for school.

The people who care for your child will be your partners. Watch how they relate to children when you visit. Ask yourself:

- Are they warm, caring, and responsive to each child?
- Do they treat each child and each family's culture with respect?
- Do they respond quickly to each child's needs and questions, comfort children who are upset, and help them work out problems?
- Do they talk with the children, read to them, and listen to what they have to say?
- Do they plan interesting things for children to do?
- Do they guide children's behavior in positive ways?
- How would my child respond to them?

Take time to talk to the staff and find out what they like best about their work and how long they have been caring for children. Your instincts can tell you if these are the kinds of people you want to have in your child's life.

Sharing What You Know About Your Child

You know your child best. Take time to talk with the people who will care for your child to share what you know. Talk about:

- How your child responds to new experiences and people
- What comforts him when he is upset
- What songs he likes best and what activities
- What helps him get to sleep when he is tired
- Whether he has any food allergies or medical problems (such as asthma or diabetes)
- What fears he has and how you handle them

If your child has special needs that have been identified, you are probably an expert on how he learns best. Be sure to share any evaluation reports you have with the staff. Find out if they have experience caring for a child with a similar need. Offer to show them what you have learned, such as his sitting positions, carrying positions, or "tricks" you have for getting him to eat. Encourage the staff to ask you questions. Sometimes their questions are related to fears such as, "Can the other children catch this?" or "Will I break his bones if I try to get him to sit as you just did." You can reassure them with your answers.



Taking Care of Yourself

To take care of your baby, you need to take care of yourself. Because your child learns so much from you, your health and well-being are very important. As a parent, there are times when you will be tired, frustrated, and overwhelmed. It may be hard for you to respond to your child in a positive way. When you feel like you are “losing it,” take a step back and try to gain control. Think of someone you know—a friend, a family member, a doctor—who can help you get through a difficult time. You may want to ask someone to care for your baby for a few hours while you spend some time by yourself.

Remember that constant stress can be harmful to your child’s brain development. And taking out your frustrations on your child can leave scars that never go away.



And this is so important, we’ll repeat it: Never shake your baby! Shaking may cause your baby’s brain to swell, bleed, or bruise. Also, don’t throw your baby into the air, even though you are just playing. Hurting your baby’s brain by shaking or throwing may cause learning disabilities, blindness, seizures, mental retardation, and even death.

Treat yourself and your baby by staying healthy. Eating nutritious food and exercising regularly will do wonders for your well-being. Put your baby in the stroller and go for a walk and enjoy nature. Take your toddler or preschooler to the park and have fun just being together. When you take care of yourself, you are taking care of your child.



Remember This

To give your baby the best start in life and a healthy brain, keep these ideas in mind:

- What you do with your child, good or bad, can affect how her brain grows and develops. It takes 15-20 years for a child's brain to grow to its full size, but most of the connections are made in the early years.
- Take care of yourself, both before and after your baby is born, by eating healthy foods, getting daily exercise, having regular check-ups, and trying to stay calm.
- Help your child to feel safe and secure by responding to her needs, staying calm, and reassuring her when she is frightened.
- Touch, cuddle, and hold your child to let her know you love her and to help her calm down.
- Provide lots of sensory experiences—tasting, touching, seeing, hearing, and smelling. These experiences build the connections that build your child's brain.
- Ask the doctor to check your baby's eyes during the first few months.
- Build a relationship with your child. Children who form attachments to a few special people in their lives are more likely to grow up to be people who feel secure, can relate well to others, and are ready and eager to learn.
- Talk, sing, play music, read, tell stories, touch, and play with your child every day.
- Take the time to find a child care or preschool program that is warm, loving, and safe. Don't settle for less.

To protect your baby's brain and healthy development:

- Avoid alcohol, drugs, and smoking during pregnancy.
- Never shake or throw your baby in the air.
- Make your home safe.
- Take your baby for regular check-ups.



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