

The Amazing Brain: What Every Parent and Caregiver Needs to Know

LINDA BURGESS CHAMBERLAIN, PHD, MPH

Experience Shapes Our Brains

How your child's brain develops each and every day is being shaped by the environment and experiences you provide. The world your child lives in actually affects how their brain grows. Your child needs lots of new, positive experiences in a safe, stable home environment to build a healthy brain. Healthy relationships are the most important experiences your child can have.



We can help children grow healthy brains by following these six simple steps.

1 Help Me Make Connections

A baby's brain is ready to connect. Babies build their brains by connecting with you and the world around them. At birth, a baby's brain has 100 BILLION nerve cells called neurons that are waiting to connect. Each neuron can make thousands of connections or only a few depending on a child's environment and experiences. Spending quality time with your child can increase your child's brain power. You can help your baby build brain connections by talking, hugging, singing, reading, playing, and exploring the world together.

The brain is a "use it or lose it" machine. There are windows of opportunity in early brain development. Some of these windows close very quickly. For example, areas of the brain involved in vision are connected by 18 months of age. If an infant's vision is blocked by a cataract or an eye patch at the time when the brain needs to be making connections for vision, a child will lose the ability to ever see out of the affected eye.

Children need the right experience at the right time. Learn as much as you can about age-appropriate activities to take advantage of windows of opportunity for your child's brain development. For example, children can learn to speak a second language without an accent. This window of opportunity starts to close as a teenager and it becomes much harder to learn and speak a second language without an accent.

2 Be There For Me

Healthy, caring relationships are food for a child's growing brain. By 6 months of age, babies can tell the difference between faces they know and don't know just as well as you can! By 18 months of age, the areas of the brain that control emotions are connecting. Babies learn about healthy relationships and how to handle stress from you, so if you are stressed, your baby will be too. Your child needs you to love them, comfort them, and encourage them. Make sure that other caregivers are also providing a safe, nurturing environment for your child.



3 Understand the Building Blocks of My Brain

A child's brain develops from the bottom up like a stack of building blocks. The brainstem and mid-brain are the first areas of the brain to develop and connect. These areas are called the "survival brain" because they control body functions that keep us alive such as blood pressure and body temperature. The limbic system is the next building block of the brain. When you have a "gut response" about something, this comes from the limbic system in your brain which handles our basic emotions.

The top building block of the brain is the cortex. This is the last area of the brain to mature. The cortex is responsible for our most complicated thinking, from decision-making to multi-tasking to controlling our emotions. Reading, writing, language, and arithmetic are all cortex functions, so children need to spend lots of time in this area of their brains to learn these new skills.

4 Build My Self-Esteem

They're more than just words. We can build a child's self-esteem through praise, encouragement, and positive experiences. Children need to hear that we believe in them and that they can be whatever they want to be. Give your child opportunities to succeed at new tasks and develop skills. From praising your child for sharing a toy with another child to teaching them how to climb up the stairs, your encouraging words can boost your child's confidence and ability to face challenges.

5 I Need To Feel Safe

Children need to feel safe. Creating a safe home isn't just about the things you do to prevent your child from getting hurt such as plugging outlets, putting safety gates on stairways, and keeping poisons out-of-reach. It's about creating a predictable, stable environment for your child. When a child feels safe and nurtured, they can focus their energy on upper brain development and learning.

Children growing up in fear or chaos tend to spend more time in "survival brain," trying to feel OK. They adapt to their environment, but it comes at a high cost. Because these children are spending less time in the cortex or "thinking brain," they often have problems paying attention, sitting still, and controlling their emotions.







6 Keep Being There!

There are big brain changes during adolescence. Adolescents do not have all the hardware in their brains yet to think like an adult. The adolescent brain goes through major remodeling that starts around puberty and continues into the early 20's. Teens need parents and caregivers in their lives more than ever to help them finish building their brains. How teens spend their time matters!

Some Information You Should Know

- 🍋 A baby's brain uses **THREE TIMES** the amount of energy that your brain does—that's a busy brain!!
- 🍋 By 6 years of age, a child's brain will be 95% of its adult size and have more connections than all the stars and planets in the galaxies.
- 🍋 Children who watch more television during the first three years of life are more likely to have problems with attention deficit disorders when they are 7 to 9 years old.

Resources for Help and Additional Information

-  **BrainConnection.com** provides information about how the brain works and how people learn. Many discoveries are being made in areas that relate to the human brain, including language, memory, behavior, and aging, as well as illness and injury. BrainConnection.com also provides practitioner-friendly tools for teaching and learning.
-  **Child Trauma Academy**, a not-for-profit organization based in Houston, Texas, is a collaborative of individuals and organizations working to improve the lives of high-risk children through direct service, research, and education. www.childtrauma.org
-  **The National Child Traumatic Stress Network** was established to improve access to care, treatment, and services for traumatized children and adolescents exposed to traumatic events. www.nctsn.org
-  **Zero-to-Three** offers a comprehensive interactive resource for parents and early childhood education professionals on healthy development of children ages zero to three. www.zerotothree.org

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The Amazing Brain: Positive Parenting Builds Healthy Brains

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The word DISCIPLINE means “to teach or train.”

Positive approaches to discipline work because you are teaching your child how you want her/him to behave. When children learn, they are building new connections in their brains. Children learn best through relationships that make them feel safe, secure, and nurtured. When you build a trusting, warm, and supportive relationship with your child, you are also helping to build your child’s brain. Positive parenting helps your child’s brain to mature and to learn from you how to deal with stress in a healthy way.



The first step is to create a plan for how you want to discipline your child. Think about positive ways to encourage good behavior with your child such as praise, routines, problem-solving, and time-outs. Having a plan for how you want to discipline your child in different situations can prevent you from reacting in a way that you don’t want to under stress. Without a plan, parents often repeat the discipline that they experienced as children. Ask yourself if there is anything about the discipline that you experienced as a child that you want to be different for your child.

Building Blocks for Positive Parenting and Discipline

-  Building trust with your child. Being there, keeping your word.
-  Showing respect. Listening, acknowledging their feelings.
-  Teaching your child how to behave. Being patient, not losing your temper.



We can promote healthy brain development and wanted behaviors by following these six basic steps for positive parenting and discipline.

1 Model Good Behavior

Your child has special brain cells called “mirror” neurons. Mirror neurons allow children to reflect what they see you doing in their brains so they can copy or imitate how you behave.

Your child can actually feel or mirror the same emotions that you are feeling! The best way to teach children good behaviors is to model good behaviors. Sharing, being kind, being respectful, and giving praise are all positive ways to teach your children how you expect them to behave.

2

Matching Discipline to Your Child's Development and Needs

Every child's brain is unique! There is no "one-size-fits-all" discipline strategy for children. Every parent needs a toolkit of effective discipline strategies that they can choose from based on their child's needs and the situation.

Your child's brain is being shaped by experience and environment-it is constantly changing and you will need to adapt your discipline toolkit to meet your child where he or she is in their development.

A good example of matching discipline to your child's development is using time-out. This strategy usually doesn't work well with children less than 3 years old-this is the age when a child's brain starts to be able to reason and understand.

You can use time-out as a learning experience to teach your child about self-control. Time-out provides the opportunity for a child to calm down. Then your child can think about what he or she did wrong and how to change their behavior. Children need to be calm to be able to access the part of their brains where they can understand the lesson you are teaching them and problem-solve about their behaviors.

Four Basic Steps for Time Out

- 🍋 Set rules for time-out ahead of time (where, how long, when you will use it); the time limit is usually one minute for each year of age.
- 🍋 Choose a quiet location for time-out where you can see your child.
- 🍋 Ask your child to think about what they did wrong and how they could do better.
- 🍋 When the time that you have set for time-out is over, talk with your child about what behaviors would be acceptable.

Several positive strategies for effective discipline are shown in the chart below. Ask yourself how you can adapt and combine these strategies for your child. For example, selective ignoring can be combined with redirecting by ignoring a child's whining because she is upset that she can't watch television and then redirecting her attention to finishing a puzzle to distract her.

Age	Strategy	Example
3 years old or younger	Redirect, distract, surprise	Redirect child to focus on something else such as a new activity. Remove or block access to problem (place gate on stairway).
All ages	Selective ignoring	Stop paying attention to the behavior you don't want; encourage and reward the behavior you do want.
All ages; should occur at the time the problem occurred for children less than 7 years old	Withholding privileges	Choose something that your child values but don't withhold something that your child needs such as a meal.
All ages	Catch your child doing something right!	Reinforce positive behaviors with praise and rewards.

3

Don't Use Physical Punishment

Children can't listen or learn well when they feel scared, hurt, or angry. Physical punishment often has the opposite effect of what parents want. Instead of teaching children how to behave responsibly, physical punishment is more likely to increase problem behaviors including resistance, power struggles, anger, and rebellion.

Physical punishment can interfere with healthy brain development. Children build and keep brain connections that are reinforced by experience. Physical punishment, pain, and fear can wire and shape a child's brain in unhealthy ways that lead to unwanted behaviors. These problems include aggression, conduct problems, depression, and substance abuse. Children who are hit are more likely to hit their friends and siblings.

Parents often say that they used physical punishment as a last resort when "they lost it" and that they had regrets afterwards. When a parent gets angry, their child can feel or mirror that emotion and get angry too. When children get angry, they cannot use the upper area of the brain that helps them control emotions and impulses. When a child is angry, they also cannot use this part of the brain to learn right from wrong.

4

Be Consistent

Children's developing brains learn through repetition - by repeating experiences and routines. It is important that you are consistent with discipline so that your child knows what to expect and what you expect from them. Being consistent does not mean being rigid. Adjust your discipline strategies as your child's brain matures and different situations arise.

Setting up routines for activities that you do with your child such as getting up in the morning, going to the store, and getting ready for bed can help. Follow through with consequences that you have set ahead of time for unwanted behaviors. Remember to praise and reward good behaviors!

5 Talk About It!

Talk with your child so next time they get it right! Talking with your child is a brain builder. Use words that your child can understand to teach your child why a behavior was not acceptable. When your child is 3 years or older, you can discuss what went wrong and ask for suggestions about how they could do it differently next time.

Children need practice making choices and experiencing the natural consequences of their choices. Create safe opportunities for your child to practice making choices such as which book he wants to read or if she wants to take her bath before or after reading a story.

6 Take Care of Yourself









Parenting is hard work. To be a good parent, you also need to take care of yourself. Getting enough sleep, asking for help when you need it, and taking time out for yourself can help you to stay healthy. Taking a few deep breaths when you are feeling frustrated with your child's behavior and giving yourself a time-out to call a friend can give you the time to think through the situation and decide what will be the most effective response.

Negative experiences that may have happened a long time ago can resurface when you are stressed, over-tired, and dealing with the many challenges that parents face. Being in an unhealthy relationship with a partner who is abusive and/or controlling can interfere with how you want to parent your children.




If you feel that your parenting is being affected by experiences you had as a child or current problems that you are experiencing, talk to someone you trust and ask for help. Remember, when you learn new things and practice strategies such as positive discipline, you are changing your brain too!

Don't forget that humor is a great discipline tool. Singing a song, making a child laugh about a funny story, and turning tasks into games can help redirect your child and encourage the behavior you want.

Resources and Books

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Phoenixchildrens.org offers a parents' brochure on effective discipline strategies and a report on the harmful effects of physical punishment.
- 
Developingchild.net describes the developmental stages of children.
- 
Healthychild.org has tip sheets on child development and effective discipline.
- 
Emotionallyhealthychildren.org is a parenting guide by Gerald Newmark, Ph.D. that shows parents and teachers how to nourish emotional health at home and at school.
- 
Caring for your Baby and Young Child: Birth to Age 5 American Academy of Pediatrics. Ed. SP Shelov. 2009. Bantam Books, New York, New York.
- 
Positive Discipline for Preschoolers By Jane Nelson, Cheryl Erwin, and Roslyn Ann Duffy. 2007. Three Rivers Press, New York.
- 
Positive Discipline: The First Three Years By Jane Nelson, Cheryl Erwin, and Rosalyn Duffy. 2007. Three Rivers Press, New York.
- 
Easy to Love, Difficult to Discipline: The 7 Basic Skills for Turning Conflict into Cooperation By Rebecca Anne Bailey. William Morrow, 2000.

For Help

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National Parent Helpline 1.855.4A.PARENT (1.855.427.2736)
www.nationalparenthelpline.org
- 
Child Help (1.800.422.4453) Contact if you are feeling frustrated or angry with your child and just need to talk.
- 
National Domestic Violence Hotline (1.800.799.7233) Contact if you are worried about your safety or that of your child(ren).

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The Amazing Brain: Trauma and the Potential for Healing

LINDA BURGESS CHAMBERLAIN, PHD, MPH

A baby's brain is like a flower ready to bloom.

From the first moments of life, a baby's brain is absorbing new experiences and being shaped by its environment. Even though an infant may be too young to have conscious memories of these early experiences, the developing brain does not forget.



First impressions last a lifetime. A baby's brain will blossom from lots of positive, nurturing experiences with you. Negative experiences have the opposite effect on early brain development—much like a flower that wilts from neglect. Early trauma can leave a lasting imprint on the developing brain. The younger a child is, the more vulnerable their brain is to the effects of trauma.

Childhood trauma can be any negative experience that causes major stress for an infant or child. Family violence is especially traumatic for children because someone they are close to is being hurt or is hurting them. The trauma of living in a home with domestic violence where a parent is being hurt or threatened can be as harmful as being physically or sexually abused. Children exposed to domestic violence live in fear and chaos—life is like a roller coaster of not knowing what to expect next. This leads to problems as a child's brain adapts to survive.



You can help children who experience trauma by understanding six basic facts about trauma and brain development.



1 Surviving or Thriving?

The building blocks of the brain develop from the bottom to the top. When children feel safe and nurtured, they spend more time in the upper building blocks of the brain where they do their most important learning such as bonding with you, learning to talk, and getting along with others. When children feel unsafe or threatened, they spend more time in the lower building blocks of the brain—focusing on survival. This can lead to changes in the brain including:

- Less development of the upper brain
- Smaller brain size
- Fewer brain connections

The lower building blocks of the brain, which are connecting and developing first, are extremely sensitive to trauma. The developing brain can become over-sensitized to stress. Children experiencing early trauma are often easily overwhelmed by minor stressors such as a change in their schedule or routine. They have difficulty soothing or calming themselves. The following problem behaviors are common among children who experience trauma:

- Difficulty with focusing and paying attention
- Anxious, unable to settle down
- Bullying and other aggressive behaviors



2 Trauma Interferes with Learning

When children feel calm and safe, they focus their energy on learning. Children who are dealing with trauma are often in a chronic state of crisis. They focus on trying to feel “OK” or normal. This compromises their ability to learn. Traumatized children have more speech problems and difficulty learning how to read.

3 PTSD Hurts the Brain

When post-traumatic stress disorder (PTSD) occurs, the brain gets stuck in the trauma and relives it over and over again. Reminders of the trauma can trigger a flood of stress hormones before a child even knows what is happening. Reminders of the trauma might be a sound or a smell such as what a child ate for dinner the night that “Mommy and Daddy got really mad.” High levels of stress hormones interfere with brain development and learning.

Symptoms of Childhood PTSD

- 🍋 Loss of developmental skills such as a child who is learning to speak stops talking
- 🍋 Zoning out, withdrawing
- 🍋 Violent play such as acting out threats and physical attacks with toys over and over again
- 🍋 Sleep problems such as night terrors or repeated night wakings



4 Trauma Leads to Other Health Problems

Children who experience trauma are more likely to have health problems such as bedwetting, stomach problems, and chronic headaches. Trauma also takes a toll on children’s emotional health. Depression, anxiety disorders, and behavioral problems are very common among traumatized children. These children often start using alcohol and drugs at an early age as a way to cope or numb their feelings. Therapists who have experience working with childhood PTSD have a variety of techniques to work with young children.






5

You Can Make a Difference

Healthy relationships with a caring adult can protect children from the effects of trauma. Opportunities for children to talk about what happened or play out their feelings about the trauma can start the healing process. Allow a child to tell their story without pressuring them to talk. You should be prepared to hear things that may upset you - adults often do not realize how children absorb what's happening around them and how much it affects them.

Children need to hear that it's not their fault. Children blame themselves when bad things happen, so they need lots of reassurance from you. Acknowledge their feelings with statements such as "that sounds like it was really scary for you" or "it sounds like you were very worried when the police came."

Some Ways You Can Help:







-  Provide lots of structure for daily activities such as meals, homework, and bedtime so a child knows what to expect and prepare them for any changes in their daily routines
-  Ask a child what he or she is most worried about
-  Help a child find ways to express their feelings such as drawing or journaling
-  Help other caregivers to understand how trauma can affect a child and how to respond supportively
-  Reduce exposure to violent media such as television, video games, and movies

6

It's Never Too Late

We can rewire and grow our brains over our entire lifetime. Every day, we are learning more about the brain's amazing ability to heal. The way we live and the quality of relationships we have can either help or hinder the potential of our brains to grow and heal. Depression, high levels of stress, and substance abuse can reduce the brain's ability to recover. However, physical activity, developing new skills, healthy relationships, and being socially active help our brains to form new connections. It's never too late to get help and start healing.

Resources

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The National Child Traumatic Stress Network was established to improve access to care, treatment, and services for traumatized children and adolescents exposed to traumatic events. www.nctsn.org
- 
Children's Crisis Treatment Center CcTC provides a full array of high-quality, comprehensive mental health services to children and their families in Philadelphia, including trauma-focused therapy to children 18 months through 13 years. www.CcTCkids.org
- 
Zero-to-Three offers a comprehensive interactive resource for parents and early childhood education professionals on healthy development of children ages zero to three. www.zerotothree.org
- 
Dr. Baldwin's Trauma Information Pages These Trauma Pages focus primarily on emotional trauma and traumatic stress including PTSD (Post-traumatic Stress Disorder) and dissociation which can follow personal traumatic experiences or a large-scale disaster. The purpose of this site is to provide information for clinicians and researchers in the traumatic-stress field. www.trauma-pages.com/bookstore.php



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