



# The Amazing Brain:

Trauma and the  
Potential for Healing

By 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 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.

## 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:

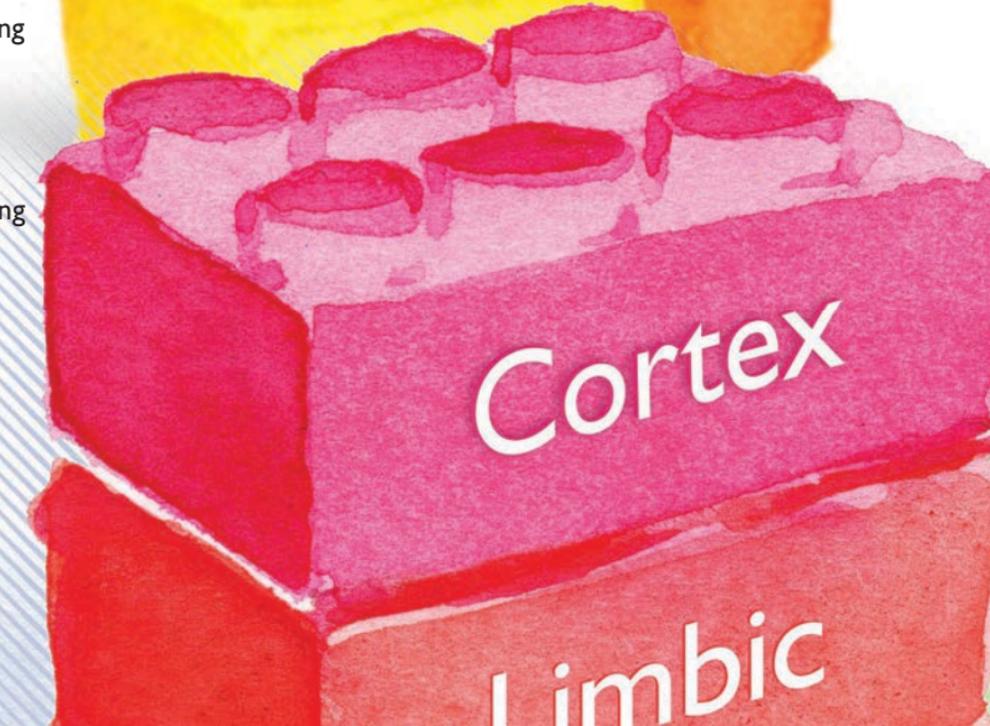
- Less development of the upper brain
- Smaller brain size
- Fewer brain connections

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

## 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.



## PTSD Hurts the Brain

When posttraumatic 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.

3

three

Symptoms of childhood PTSD include:

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

**By recognizing the symptoms of PTSD, we can help children to get treatment as soon as possible.** Therapists who have experience working with childhood PTSD have a variety of techniques to work with young children.

## 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.

4

## 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."



Other ways you can help include:

- ✦ Ask a child what he or she is most worried about
- ✦ Help a child to find ways to express their feelings such as drawing or journaling
- ✦ 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
- ✦ 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



## 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.

### **BrainConnection.com**

This Web site 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.  
[www.Brainconnection.com](http://www.Brainconnection.com)

### **Child Trauma Academy**

The 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](http://www.childtrauma.org)

### **The National Child Traumatic Stress Network**

The NCTSN was established to improve access to care, treatment, and services for traumatized children and adolescents exposed to traumatic events.  
[www.nctsnet.org](http://www.nctsnet.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](http://www.CcTCkids.org)

### **Zero-to-Three**

This site offers a comprehensive interactive resource for parents and early childhood education professionals on healthy development of children ages zero to three.  
[www.zerotothree.org](http://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, whether following individual traumatic experience(s) or a large-scale disaster. The purpose of this award winning site is to provide information for clinicians and researchers in the traumatic-stress field.  
[www.trauma-pages.com/bookstore.php](http://www.trauma-pages.com/bookstore.php)



**The Amazing Brain: Trauma and the Potential for Healing**, 2008, Philadelphia, PA. This brochure was written by Linda Burgess Chamberlain, PhD, MPH with support from the Institute for Safe Families and Multiplying Connections of the Health Federation of Philadelphia and Advocates for Youth.

**Linda Burgess Chamberlain** is the founding director of the Alaska Family Violence Prevention Project. An epidemiologist specializing in domestic violence, she is an internationally recognized speaker on the effects of violence on children and brain development. She lives on a rural homestead outside of Homer, Alaska with her dog team. A national Kellogg Leadership Fellow, Dr. Chamberlain is also a motivational speaker and uses "lessons from the trail" to promote key strategies for teamwork and leadership.

[howlinghusky@gci.net](mailto:howlinghusky@gci.net)



**The Institute for Safe Families (ISF)** is a non-profit organization whose mission is to prevent family violence and promote the health and well being of each member of the family and their community. Since the early 1990's, ISF has developed innovative programming and built coalitions that unite health care providers with social service, policy experts, researchers, academicians, and victim/survivors. One of ISF's unique strengths has been to create forums for cross-systems dialogue aimed at building greater capacity for more effective prevention and response to family violence.

[www.instituteforsafefamilies.org](http://www.instituteforsafefamilies.org)



**Multiplying Connections** of The Health Federation of Philadelphia is a cross system collaborative whose mission is to translate the research on early childhood brain development into better practice through professional training and organizational and policy change. Multiplying Connections is developing materials and strategies to promote trauma informed and developmentally appropriate care across the public child and family service system in the City of Philadelphia. This capacity building initiative is funded by the William Penn Foundation.

[www.multiplyingconnections.org](http://www.multiplyingconnections.org)



**Advocates for Youth** is dedicated to creating programs and advocating for policies that help young people make informed and responsible decisions about their reproductive and sexual health. Advocates provides information, training, and strategic assistance to youth-serving organizations, policy makers, youth activists, and the media in the United States and the developing world.

[www.advocatesforyouth.org](http://www.advocatesforyouth.org)

Design and Illustration: Peter Camburn  
About Face Design, [www.aboutfacedesign.net](http://www.aboutfacedesign.net)

