

Creating Safe Places for Our Children*

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Following the war in Viet Nam, American soldiers came home with Post-Traumatic Stress Disorder (PTSD) and for the first time, we began to recognize the deep impact of chronic and acute stress. Many veterans were plagued by PTSD and continued to relive the traumatic events of the war in spite of having returned safely to the bosoms of their loving families. It was later found that veterans with PTSD had deterioration in important brain structures including the hippocampus, which is an important component in the “limbic system” in humans and is responsible for memory, learning and emotions.

Although it is not fully understood why brain structures continue to deteriorate even after danger has passed, it is clearly understood that there are significant alterations in the brain functioning of individuals who have experienced chronic stress. A stress hormone, cortisol, is believed to be one of the mechanisms driving these alterations. There appears to be a strong link between elevated levels of cortisol and deterioration in sensitive regions of the brain, such as the limbic system. These neurological changes have the ability to significantly affect behavior across many domains.

Cortisol is a stress hormone emitted in low levels among healthy individuals. However, during acute stress, cortisol and adrenaline flood the human brain and body, enhancing the capacity for quick movement and thought, which are needed for swift escape from dangerous circumstances. Cortisol serves as a survival mechanism—as part of our “fight or flight” response. Although the function of cortisol in normal daily life is as an aid for survival, in individuals who experience ongoing stress, it actually becomes a threat to survival. If the stressors occur early in development, they may ac-

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tually induce organizational changes in responses to future stressors, which are mediated by the HPA¹ axis. Children who experience sub-optimal care during the early months of life are susceptible to hyper-responsiveness of the HPA. Part of that responsiveness may include chronically elevated levels of cortisol which can become toxic to sensitive regions in the brain such as the hippocampus the limbic system which are involved in decision-making, and in understanding and expressing emotions.

In contrast, Serotonin is a protective neurotransmitter in the brain with primarily inhibitory functions, which is emitted, in normal amounts during normative development. Serotonin is produced naturally when a parent cuddles, holds, rocks or soothes their child. It is the “master-regulator” of the brain and in addition to giving a sense of well being, serotonin inhibits over-production of excitatory neurotransmitters. Children who don’t receive touch (hugging, rocking, holding) during their early months of life may have alterations in their neurochemistry which induce decreased levels of serotonin in addition to elevated levels of cortisol. Sadly, children who come from emotional “war zones” may ultimately develop neurochemistry akin to that of the Viet Nam war veterans.

A growing body of developmental research is uncovering new information about these mechanisms and how they affect human behavior. Our own research in a five-week summer camp for at-risk adopted children, *The Hope Connection*, is uncovering new information about how to positively calm these hyper-responsive neurological systems in children who have come from “hard places.”

Megan Gunnar, a researcher at University of Minnesota, recently tested cortisol levels in a sample of children who had been adopted from orphanages in Romania. Although the children had been home with their adoptive families for an average of five years, a sub-set of them continued to have levels of cortisol that were drastically elevated above normal levels. In addition, another sub-set of the children continued to have levels of cortisol that were significantly elevated.

Dr. Harry Chugani of Wayne State University in Detroit, Michigan, did some groundbreaking research several years ago by imaging the brains of children adopted from orphanages in Romania. He found that in some of the children, sensitive regions in the brain were reduced in size as well as in activity. It is believed that chronic levels of cortisol may be one of the mechanisms that is driving these developmental aberrations.

In the wake of current research, adoptive parents may ask what can be

¹Hypothalamic-Pituitary-Adrenal

done if their children are experiencing PTSD² or anxiety states associated with elevated levels of cortisol. We offer numerous suggestions from *The Hope Connection*, which are garnered from our years of work with families who've adopted children from hard places. Recognizing anxiety states can be accomplished through observation of behavior, physiological states and physical traits.

- **BEHAVIOR CONSISTENT WITH ADHD:**³ First, we encourage parents begin to take stock of their children's activity and attention states. Do they seem hyperactive? Have they been diagnosed with attention-deficit? If so, there is a chance that they're not hyperactive, but simply hypervigilant. That is, they are always on guard, observing the environment for signs of "danger." Hypervigilance is common among children who did not have attentive, protective parenting during important developmental periods of their lives.
- **FREQUENT/CHRONIC PUPIL DILATION:** Second, we encourage parents to observe the pupils of their children's eyes for signs of anxiety or fear. Are the pupils enlarged? Do they become enlarged often and during minor stressors? Are the pupils enlarged even though the child seems calm? Most children with histories of early neglect have learned to mask their behavioral responses. As a matter of fact, they may not even be able to identify their own states of fear or anxiety, until parents guide them to recognize and "name" the feelings. We invite parents to look at the pupils of their children's eyes. Enlarged pupils typically indicate excitation in the central nervous system, which may be associated hyper-responsiveness of the HPA axis and with the release of stress hormones in the body and brain of the child.
- **RAPID HEART-RATE/RACING HEART:** Third, we encourage parents to monitor the heart rate of their children. Many of our parents put their hand over the heart of their child when they speak to them, or for a small child, parents can put a gentle hand over their children's hearts while they are sitting in their laps. Is the heart pumping wildly, even though the child appears to be sitting calmly in your lap? These are signs of a chronic state of anxiety. Some children even mask their anxiety and fear by becoming aggressive. Guiding your children to understand their states, and guiding them to "use their words" and tell

²Post-Traumatic Stress Disorder

³Attention Deficit Hyperactivity Disorder

you what they feel and what they need are critical tools for adoptive parents. Many parents find “feeling charts” to be helpful in guiding their children to identify and name the feelings. Charts of children’s facial expression of feelings can be purchased at bookstores and school supplies stores.

- **PHYSICAL CHANGES:** Finally, we encourage parents to observe their children for other physiological evidences of elevated cortisol, such as pain agnosia and diminished physical size. Pain agnosia means literally “to be agnostic (not knowing) of pain.” Elevated levels of cortisol can block sensations of pain. This is actually part of the protective survival response, which under normal circumstances numbs pain from occasional physical injuries. However, children with pain agnosia can have significant injuries, which seem to go unnoticed. These are the children who barely whimper with injuries that might send other children screaming to their mothers. In addition, diminished physical size can also be associated with chronically elevated cortisol. Again, under normal circumstances, this is part of the survival mechanism in which during occasional crises, the body uses all of its energy to mount a response to the stressor. However a body that is on chronic “alert” does not expend energy for growth for long periods of time—all energy remains devoted to constant vigilance against threats of danger. Of great interest, following our summer camp each year we have children who experience dramatic growth for the first time since their adoption. That growth is associated with reduction in their anxiety levels and reduction in their attendant levels of cortisol.

In our summer camp program with adopted children we began collecting salivary cortisol three years ago. What we discovered the first year when we gathered cortisol was astounding. We discovered that in their homes, the week prior to camp, the morning cortisol in our children was inflated to levels two-and-a-half times greater than normal. Both at home the week before camp, and the first week of camp, their levels were virtually identical. However, much to our delight and amazement, during the second week of camp, we documented cortisol levels that were half of the previous levels! At the same time, we documented positive changes in behavior, attachment and language that were statistically correlated with the reductions in cortisol. These data provided us with increased understanding about why our summer camp intervention is so effective for children with histories of neglect or maltreatment. What we have learned can be applied by any parent, in any

home, with any child. We call it creating an environment of “felt safety.” It is not enough that the parents know the children are safe—it only “registers” in the children’s physiology and neurochemistry if the children themselves know that they are safe!

Adoptive parents may ask what can be done if their children show signs of hypervigilance, enlarged pupils or rapid heart-rate. Again, we offer suggestions from our work with families of adopted children. Helping children heal these anxiety states can be accomplished through multiple mechanism including physical activity, appropriate sensory input, and by creating an environment of predictability and control.

- **PHYSICAL ACTIVITY:** Physical exercise naturally reduces cortisol and increases serotonin. In the camp, we offer physical activity every two hours during the day. Running on the playground, climbing the slide, jumping on a trampoline, riding a bike - all of these physical activities bring down levels of cortisol. Any “stereotypic” movement (doing the same movement over and over again), such as walking, riding a bike, bouncing on the trampoline, and swinging, not only reduce cortisol, but actually elevate serotonin.
- **SENSORY INPUT:** Appropriate levels of sensory input are calming. Tiffany Field found in her work with premature infants, that if she gave them “baby massages” several times a day, they gained weight faster than children who were not touched. In addition, she found that the “touched” preemies were released from the hospital much earlier than infants who did not receive the baby massage. Tiffany has published numerous articles and books on touch in which she documents the fact that touch is one of the mechanisms of early child development that calms the infant’s central nervous system, and induces balanced neurochemistry in the developing child. Safe sensory input such as hugging, rocking, touching—all help the infant’s HPA axis down-regulate and arrive at a calm state.
- **PREDICTABILITY:** Creating a safe place for children can be accomplished through the mechanism of predictability and control. Predictability can be established by telling the child what will happen next. Parents can do this naturally throughout day, by saying “In five minutes, we will put up the toys and have supper.” “In ten minutes we’re going to bed.” “In 10 minutes, we’re going to leave for church.” By “marking the task” and making it predictable, parents can allay their children’s anxiety about what happens next. We encourage

parents for example, when they go to the home of a new friend, to seek permission from the hostess to take their children on a tour of the house, and show them where different rooms are—where the toys are—where the family puppy sleeps. By familiarizing a child with the strange house, the child can feel safer. Most adults remember times during their own childhood that they were afraid of “something” sinister in their dark closet, or under their bed. Because it was dark, it was easy to imagine fearful, terrifying things. Simply turning on the light and looking under the bed was enough to ensure us (and I do means “us”) that we were safe. In many ways parents can “turn on the lights” for their adoptive children and let them see that they are actually safe. Predictability about their environment is a major element in helping children experience this type of “felt safety.”

- **CONTROL:** Giving appropriate levels of control to children helps them feel safe. Ongoing research has repeatedly demonstrated that having a sense of control over the environment greatly reduces anxiety. Giving appropriate control can be as simple as asking a child “Would you like to wear your red dress or your blue dress today?” or “Would you like to hold my hand or just walk beside me?” or “Would you like to play on the playground first or have your snack first?” or “Would you like to use the crayons or the markers?” By simply giving children choices, parents can help them learn to make good choices, but also, help the child feel appropriately empowered. And a child who feels empowered and is in an environment that feels predictable is far less likely to have negative physiological and emotional responses.

When we look at the three years of cortisol data from *The Hope Connection*, we see that every year our new campers have an average cortisol level that is more than double the normal rate. Each year we document the fact that by the second Wednesday of camp, our children have cortisol levels in the normal range. To many parents amazement, their children begin to speak, to express emotions and appropriate social responses during camp. Possibly the most important lesson we have learned during our years in this work, is that children who experience “felt safety” are free to learn and to grow. Children who feel safe can be released from emotions that have held them hostage. They are no longer prisoners of war; they are free to heal and to become secure, trusting children!