BIOFEEDBACK™

The Physiologically Gifted Child

Leah M. Lagos, PsyD, BCB

Leah Lagos, LLC, New York, NY

applied psychophysiology & biofeedback
aapb
an international society for mind-body research, health care, and education

Biofeedback
Volume 41, Issue 2, pp. 62–65
DOI: 10.5298/1081-5937-41.2.06

SPECIAL ISSUE

The Physiologically Gifted Child

Leah M. Lagos, PsyD, BCB

Leah Lagos, LLC, New York, NY

Keywords: physiologically gifted child, sensitivity to stress, cardiovascular reactivity, sensory overload, heart rate variability biofeedback

The Physiologically Gifted Child model proposes that sensitive children can turn their vulnerability to stress into strength through physiological training. When the child's sensitivity is viewed as a physiologically modifiable trait, the child is less likely to engage in self-blame and more likely to engage in self-care strategies to manage emotions. The author emphasizes that cardiovascular reactivity is significantly higher in a child with physiological giftedness. Because the physiologically gifted child is wired to react more intensely to stress, he or she is unlikely to be able to reduce sensitivity without addressing its physiological origin. The author proposes biofeedback and self-care activities as methods to reduce a physiologically gifted child's vulnerability to stress while simultaneously allowing the child to benefit from his or her extraordinary gifts of feeling and perceiving. A description of a physiologically gifted child and optimal performance strategies illustrate this concept.

Introducing Rudy

Rudy is a caring, thoughtful, and compassionate young individual who feels the world a little more deeply than do most others. He represents a subset of youth, including boys and girls, who are physiologically wired for heightened sensitivity to stress. The story of Rudy presents my concept of the physiologically gifted child (PGC). It shows how the life of the PGC is shaped by a heightened physiological sensitivity. Best of all, it provides a framework for counselors, teachers, and parents to identify children with these wonderful gifts and to assist these children in managing their gifts.

The Physiologically Gifted Child

Rudy is a PGC. He is part of a subset of the youth population with an innate trait of high physiologically sensitivity. Few parents and coaches understand this trait, and as a result, the Rudys of the world are often misunderstood. A coach, for instance, who doesn't understand how Rudy is wired to respond to stress may continue to point out Rudy's mistakes and demand that he put in more effort and try harder. Like most PGCs, however, Rudy often performs at his peak when coached and/or raised with compassion and understanding. The coach may therefore be most effective in motivating Rudy to try harder by congratulating him for his strong effort or noting that Rudy is improving on a skill (that requires more training). It is important to understand that Rudy is physiologically wired for heightened sensitivity. Like many PGCs, Rudy processes sensory data much more deeply and thoroughly because of a biological difference in his nervous system. He demonstrates a heightened cardiac response to stress. His heart rate increases by at least 20 beats per minute during moments of stress as compared with other kids, whose heart rates increase on average about 10 beats per minute. This heightened increase in heart rate is a key characteristic of a PGC.

Rudy perceives vastly more of what surrounds him, including other's feelings, atmospheres, energies, and pains, than other children. Most of all, he feels much more intensely about life. This can bring tremendous joy. After all, feelings are the very juice of life. As a PGC, he can truly enjoy loving relationships, sports, art, music, and nature with a great depth and richness. The challenge is that the inevitable knocks of daily life can affect his nervous system more than they affect other kids. Harsh words that others shrug off may leave him sore for some time. Despite his best efforts not to be bothered after he loses a soccer match, he has difficulty letting go of the disappointment for hours or sometimes days.

The Struggle with Sensory Overload

Rudy watched as his fourth-grade peers teased a young girl about the appearance of her tattered clothes. The little girl turned her head to Rudy with a blank stare. Their eyes met for only a few seconds, but it felt like hours to Rudy. He hadn't felt so helpless in a long time and couldn't let go of the pain. Minutes passed, hours went by, and he returned home feeling shaken and his heart still racing from witnessing the young girl being bullied. "*I just haven't been calm since watching them tease my classmate*," *he*

said to his mother. "*I could feel, in my heart, how much their words hurt her.*"

Like many PGCs, Rudy has an outstanding ability to feel, sense, and perceive emotions. Unlike most kids his age, he has an innate ability to sense emotions in the environment and to then respond physiologically to these perceived emotions as if they were his own. This physiological response to emotions bypasses conscious thinking. It is automatic and cannot be undone by cognitive behavioral techniques that seek to help him manage negative or fearful thoughts. Rudy is wired to detect and feel emotions, like a highly tuned antenna. Further, because his senses collect more data from the environment than his peers' senses do, Rudy is constantly trying to prevent a chronic state of sensory overload.

Sensory overload is due to physiological overstimulation. It occurs when Rudy's sensory experiences exceed the ability of his nervous system to process and make meaning from the sensory experiences. A common example of this is a holiday dinner, which includes Rudy's family friends, relatives, music, talking, food, storytelling, game playing, hugging, and the unwrapping of gifts. In this situation, there is an abundance of sensory experiences entering his nervous system all at once. Rudy, however, does not have a filter like many others at that party. His gift is that he experiences all the sensory experiences at once. This can lead him to behaviors that are associated with sensory overload such as needing to retreat, withdrawing, or otherwise becoming quiet and sullen. It is exhausting to feel so much, at times! Even if he is having a fun time, his nervous system can still feel overwhelmed. Further, symptoms of sensory overload can vary greatly in each PGC.

A few common symptoms of sensory overload include the following:

- Heightened irritability
- Refusing to participate in activities
- Covering eyes around bright light
- Poor eye contact
- Tantrums for no apparent reason
- Inability to focus
- Sensitivity to sounds
- Jumping from one activity to another
- Withdrawal from social interactions
- Fatigue and immediate need to take a nap
- Unusually low activity level
- Looking for ways to escape and be alone

The Extraordinary Gifts of a PGC

For much of his life, Rudy didn't always function as well in stressful situations as his peers or siblings. Yet when Rudy and his family began to recognize his physiologically sensitivity as a gift, he was able to adopt life strategies that allowed him to protect and exercise his innate strengths.

Like most PGCs, Rudy has a set of extraordinary gifts. He tends to have more imagination and creativity than most. He can create new pathways to complete old routines. In sport, for instance, Rudy is often the teammate who develops "new plays" in football that lead the team to victory. Another strength is that Rudy has an exceptionally high level of perceptiveness. His gifted nervous system absorbs more information from a situation than a non-PGC.

Rudy reads his own emotion and other people's feelings very easily. He has a high level of empathy for others' needs. At times, Rudy tends to have stronger intuition than most kids his age. For instance, he exercises the ability to reflect on matters, think subtly, and develop wisdoms.

Kids like Rudy often grow up to be people who have successful careers because of their innate ability to connect with people. Rudy can meet someone for a day and develop a lifelong friendship. He is also likely to grow into an adult who has a blend of friends from childhood and adult friends from business.

A vital point is that physiological giftedness is strength. Many courageous leaders and imaginative professional athletes have this gift. In 2012, I met a football coach at the *NFL Combine*. He told me about his struggle with physiological giftedness in the tough sport of football. If it weren't for his determination, passion, and pioneering efforts of being able to perceive and detect emotions, however, some of the winning games that he coached would have never happened. One has only to look at leaders such as Martin Luther King Jr. or the Dalai Lama to see the effect that physiological giftedness can have on the world.

Why the Concept of Physiological Giftedness Was Created

The concept of the PGC is rooted in my experiences as a licensed psychologist and board-certified biofeedback provider to PGCs, coaches of PGCs, parents of PGCs, and athletes at all levels of competition who are now or once grew up as PGCs. Based on my work with this population for the past 7 years, I estimate that PGCs comprise about one sixth of the population. There are many terms used to describe children who feel the world more deeply, including Elaine Aron's concept of the highly sensitive child and Tom Boyce's idea of the orchid child. The aim of this concept is

to recast sensitivity as a physiological strength, which, like any muscle, requires specific training to be able to perform optimally.

How to Identify If a Child Is a Rudy

PGCs may not have all of the following characteristics. They may also have these characteristics to differing degrees. Like any child, however, their childhood environment and experiences shape how these advanced gifts will develop and be used.

What Are the Traits of a PGC?

Physiologically gifted children will typically

1. Feels things deeply
2. Become easily overwhelmed in big crowds or large groups
3. Withdraw and need time alone when overstimulated
4. Show sensitivity to sound and/or light
5. Learn better from constructive and gentle feedback than criticism and/or punishment
6. Exhibit difficulty concentrating in loud or noisy places
7. Display heightened sensitivity to pain
8. Prefer quiet play
9. Have a clever sense of humor
10. Seem to innately know/perceive what other people are thinking
11. Feel the emotions of others as if they were his or her own

Understanding the PGC

A PGC is wired for strong physiological responses to stress. The heart of a PGC actually works a little differently than others. The magnitude of their cardiovascular responses, the change in heart rate from baseline to a response to a stressor, is exaggerated. During a laboratory stress task such as the Stroop test, for example, a PGC's heart rate increases between 20 and 60 beats per minute as compared with baseline. Most children demonstrate a cardiac increase of about 10 beats per minute during such tasks. A PGC often also demonstrates a heightened cardiovascular response to loud noises and criticism. As a result, a PGC learns better from constructive and gentle feedback than criticism and punishment.

A PGC is often misunderstood. Because our culture values the brain, their heightened autonomic reactivity is often understood just in terms of "how the sensitive child's brain works." The PGC's heightened cardiovascular reactivity affects their entire autonomic nervous system functioning, including how the brain processes emotions. In fact, a PGC has both a sensitive heart and a sensitive brain.

A PGC feels emotions more deeply. Because the child is more physiologically reactive to internal and external stimuli, the PGC also has strong emotional responses. At times, the highs of life feel more pleasurable. On the other hand, the lows can also feel intensely hopeless or unbearable. Telling a PGC to "emotionally toughen up" is an impossible mandate. Why? To control their emotions, the PGC must learn to control his or her physiology.

A PGC can become easily overwhelmed by too much stimulation. Because of physiological reactivity to multiple types of stress, the PGC is naturally overstimulated by stimuli that other children may not even notice. The PGC typically has an acute sense of sound, hearing the "tick-tock" of the desk clock, and may often report adverse reactions to bright lights. The PGC may become irritable, become tired, or withdraw from large gatherings such as holidays, birthdays, or graduations even if enjoying the event. Too much stimulation can interrupt the PGC's focus and attention.

PGCs may require time alone after stimulating events or daily activities to recharge their nervous system. Given this, a PGC will function more efficiently and effectively if allowed to take frequent breaks. By frequently taking breaks, PGCs are able to restore homeostasis in their bodies.

Optimal Performance Strategies for the PGC

The following practical strategies are for helping the physiologically gifted child to perform optimally in health and in life:

1. Focus on gifts: A PGC is aware of experiencing emotions differently than others. This difference can create feelings of isolation, hopelessness, and rejection if not validated. A primary objective of working with a PGC is to promote self-understanding. The aim is to fortify and empower the child by discussing the joy and care that heightened sensitivity can bring to the world. A PGC can benefit from exploring how sensitivity helps him or her to excel in academics, sports, and relationships.
2. Develop an inner cheerleader: A PGC can be vulnerable to low self-esteem. A PGC is often misunderstood and may receive criticism for being "too sensitive," "too shy," or "difficult to understand." In addition, a PGC tends to be an avid self-critic who needs extra support in developing a positive internal voice. Here are some tips for a PGC to develop an internal cheerleader:
   a. Speak back to negative thoughts about yourself. For every negative thought, produce two reasons as to why that thought is not true.

   b. Write a list of negative thoughts about yourself on a sheet of paper. Then, say each thought aloud and throw the thoughts (one by one) into the garbage. After physically discarding the negative thoughts about yourself, hire an imaginary cheerleader to sit in the mind. Write a list of thoughts that this cheerleader will cheer in your mind in the upcoming week. Post this list in a location where it can be viewed daily.
   c. Maintain a daily journal of positive thoughts about yourself. How did your physiological giftedness help you today? How was your ability to perceive other people's emotions helpful to the world today?
3. Stop the self-blaming: Addressing sensitivity from a physiological perspective may help to mitigate the shame that can be related to "being perceived as too sensitive and needing to be tougher." This is especially true for boys.
4. Learn ways to identify sensory overload: Remember that a PGC becomes overwhelmed by too much stimulation. How can a PGC learn to reduce sensory overload?
   a. Become an expert at the common signs and symptoms of sensory overload.
   b. Identify when sensory overload has occurred in the past and what triggered it.
   c. Explore potential future situations (e.g., first day of school, graduation day, a birthday party, etc.) that may cause sensory overload.
5. Acquire tools to manage sensory overload: A PGC was born to feel the world more deeply. This can be strength instead of vulnerability if the child is provided with tools at an early age to manage feelings of sensory overload. How can a child with such big emotions learn to tame inner reactions?
   a. Learn to control the heart rate's response to stress through heart rate variability biofeedback. The PGC will gain the ability to control his or her physiology through the breath.
   b. Deal with negative emotions through movement. Running, dancing, or jumping rope for as little as 10 minutes can help the PGC to relieve anxiety.
   c. Invent new ways to retreat (and decompress). A PGC favorite is to escape to the bathroom when feeling overwhelmed in large groups or gatherings and practice 5 minutes of breathing. This coping strategy helps the child to decompress physiologically by being away from the crowd and controlling his or her heart rate.
   d. Develop a sensory overload emergency plan. What should the child do when he or she feels overwhelmed? By mapping out a personalized plan for dealing with sensory overload, the child gains confidence in his or her ability to manage emotions during crucial moments.
6. Educate parents, family, and teachers: For most PGCs, it is a great relief to learn why they are more sensitive to stress compared with their peers. It is also important to meet with the parents and/or teachers to discuss the unique gifts of this trait. PGCs need to handle themselves differently from others in terms of self-care and preventing sensory overload. Further, society norms (e.g., to be tough and "get over it") can sometimes be totally inappropriate for a PGC at home and in school. There is an important need to educate parents, educators, and coaches about the nature of a PGC's physiology and to discuss accommodations to help him or her flourish.

A Note from the Author

Over the past several years, I have been grateful to encounter and work with a specialized group of children and young athletes who feel the world more deeply. Rudy and many other physiologically gifted children have described heart rate variability biofeedback training as a life-changing experience. As these talented children gain control over their ability to regulate their physiology, they also tend more extraverted, confident, and social. My hope is that with tools such as biofeedback and continued parent as well as teacher education, we will help to reduce the stress and enhance the health and performance of these wonderfully talented and caring young individuals. PGCs often inspire the world with their passion, determination, and creativity.

Leah Lagos

Correspondence: Leah M. Lagos, PsyD, BCB, 635 Madison Avenue, Fourth Floor, New York, NY 10022, email: drleahlagos@gmail.com.