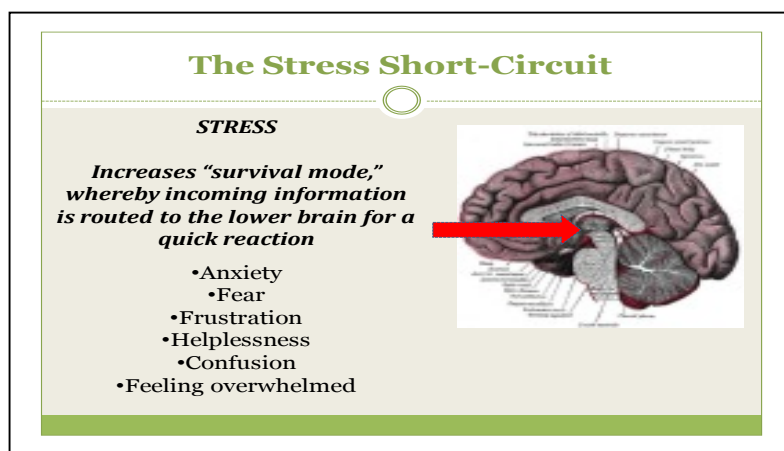
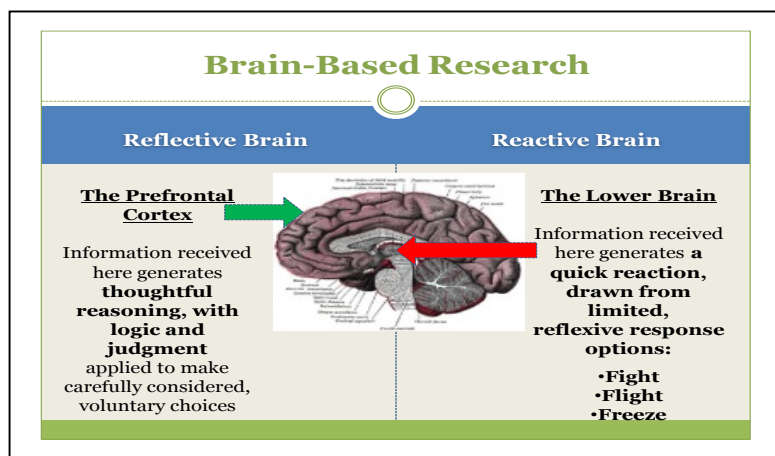


**Evidence-Based Practices in Teaching Self-Calming to Special Needs Children:
Integrating Yoga, Psychology, and Structured Teaching
so Children Can "S.T.O.P. and Relax"**

Dr. Debra Collins, Ph.D., NCSP, School Psychologist, FL Psychologist

- Brain-Based Research provides information regarding the negative impact of stress on self-regulation, flexibility, learning, and adaptive decision-making. As described by neurologist Dr. Judy Willis¹, "The emotional filter (amygdala) determines where information will be received and from where behavioral responses will be determined. High stress blocks information entry to the prefrontal cortex so it cannot be reflected upon or incorporated into long-term memory."



Success vs. Stress

When the Reflective Brain is engaged to determine decisions, guide behavior, and store information in long-term memory, functioning is optimized

Academic

Social

Emotional

When stress short-circuits the Reflective Brain, there is dysfunction

Fight: Act Out, Verbally and/or Physically

Flee: Withdraw, Protest

Freeze: Shut down, "Zone out"

- Stress impedes the flow of information to the Reflective Brain. Many children are affected by excessive stress during the school day. Interventions to address this are essential, particularly for children who experience stress episodes of excessive frequency, intensity, and/or duration. During the school day, children encounter situations that can precipitate anxiety, including academic challenges, such as an important test, or social challenges, such as bullying. Stressful events from home and other extracurricular settings also may affect them during the school day. Children with disabilities that impede self-regulation, such as autism or mood disorders, are particularly vulnerable to escalating stress and anxiety. Their triggers include everyday sensory input, as well as situational events.

An excessively anxious, agitated state often is associated with highly challenging behaviors, ranging from verbal complaints, protests, and withdrawal to tantrums, aggression, and “meltdowns.” It can be difficult for others to soothe the child, who might only recover composure after becoming physically exhausted. Stress episodes of high frequency, intensity, and/or duration significantly interrupt a child’s learning and social engagement. In some instances, the behaviors associated with these episodes present a danger to self or others.

The nature of stress episodes and the path from escalation to recovery have been detailed by authors such as Janice Janzen² and Brenda Smith Myles³. Primary aims of intervention are to prevent episodes and minimize escalation. Secondary aims are to facilitate recovery of calm and composure when an episode has occurred.

Related strategies involve assisting teachers to address sensory and event triggers by anticipating them, preparing for them, minimizing them, and so forth. Other strategies, such as those outlined in The Incredible 5-Point Scale⁴, aim to increase the child’s own ability to recognize stress and implement a plan to counter it.

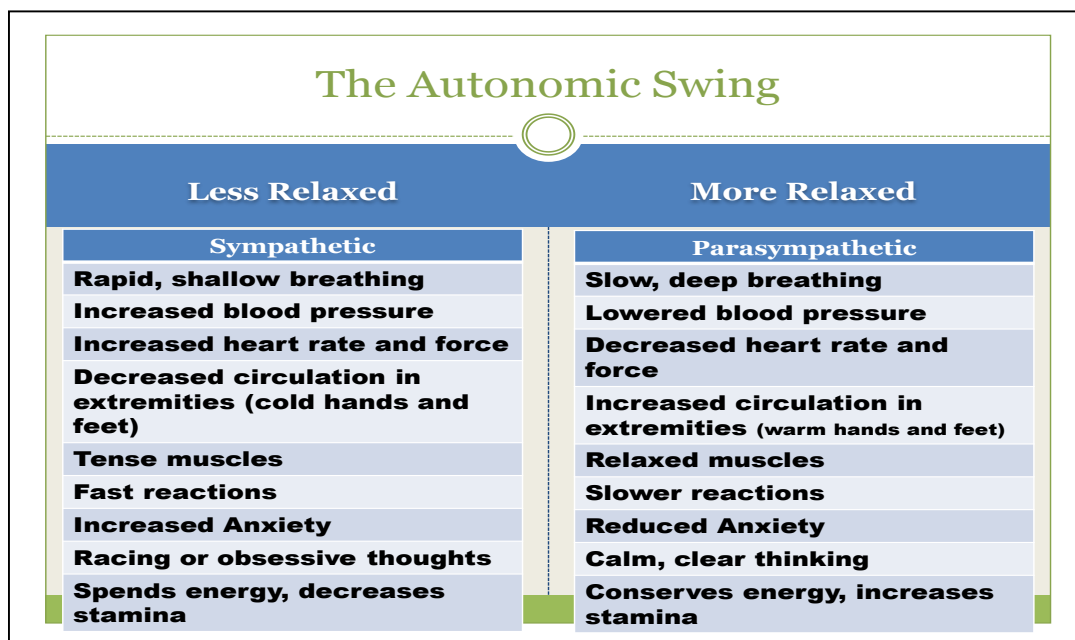
However, there has been little guidance for teachers as to how to make a *state of relaxation* available to children who are vulnerable to excessive anxiety and stress.

Are We Missing Something?

**Can we assume that when we say,
“RELAX!”
that word is meaningful to the child?**

***What DOES “Relaxation” Mean?
How Does It FEEL to be “Relaxed”?***

- Relaxation involves integration of physiological and psychological factors to shift the autonomic nervous system from "fight/flight" to calm. Dr. Herbert Benson⁵, founder of the Benson-Henry Institute for Mind-Body Medicine (www.massgeneral.org/bhi), defined the [Relaxation Response](#) in 1974. He described a state opposite to the stress or "fight/flight" response.
 - Relaxation involves integration of physiological and psychological factors to shift the autonomic nervous system from "fight/flight" to calm.
 - The continuum is illustrated by the chart below, showing the relationship between the sympathetic and parasympathetic modes of the autonomic nervous system
 - "The [relaxation response](#) is a physical state of deep rest that changes the physical and emotional responses to stress."



- A child can learn self-calming when the physiological and psychological components of relaxation are broken down into a set of teachable skills. The research by Dr. Benson and others shows that the balance of the autonomic nervous system can be influenced by conscious actions and thoughts. Practice of certain actions and thoughts increases the depth of the relaxation response and the ease of attaining it. For example, Dr. Benson notes that methods to elicit the relaxation response include meditation, mindfulness, progressive muscle relaxation, tai chi, and yoga.

To develop the S.T.O.P. and Relax approach, key physiological (body) and psychological (mind) factors were organized into skill sets amenable to instruction and practice:

- Discrimination between tension and relaxation; self-awareness
- Breathing
- Muscle control
- Balance
- Calming thoughts

- Successful instruction, systematic practice, progress monitoring, and generalization of relaxation and self-calming skills is accomplished using evidence-based methods (e.g., those cited by the National Standards Report⁸ produced by the National Autism Center), Drawing upon research and evidence-based interventions, the S.T.O.P. and Relax method organizes the practice of body and mind skills into lessons accessible to children with varying abilities, including autism and related disorders. Research in relaxation and psychology (Benson⁵, Groden et.al.^{6,7}, Janzen²) provides rich information about breathing techniques, yoga, progressive relaxation, and cognitive-behavioral strategies. Evidence-based practices in therapy and instruction for persons with autism include the Social Story™ methods of Carol Gray⁹ and the TEACCH¹⁰ center's emphasis on structured teaching approaches and visual cues.
 - Sensory cues (music, lighting)
 - Progressive relaxation
 - Yoga postures
 - Visual cues
 - Guided imagery
 - Structured teaching
 - Social stories
 - Self-calming routine
 - Positive practice

Physiological methods such as breathing techniques, yoga postures, and progressive relaxation make practice accessible to children challenged by verbal communication and/or abstract concepts.

Structured teaching approaches and visual cues enhance comprehension and build skills systematically.

The National Autism Center's National Standards Report confirms that progressive relaxation, modeling, cognitive behavioral therapy, and story-based interventions are effective in decreasing behavior problems, decreasing restricted/repetitive behaviors, improving sensory-emotional regulation, and/or improving self-regulation.

- **Self-calming skills support the child in pursuing success at school, in the workplace, and in the community.**

As noted earlier, excessive anxiety and emotional agitation causes children to engage in "fight/flight/freeze" behaviors that interrupt their learning and social engagement and, for some, present a danger to self or others.

Mastery of relaxation and self-calming skills makes the child less vulnerable to lower-brain reactions. When the reflective brain is engaged, a child is able to control his/her thoughts and actions and make productive, constructive choices.

- **High-stakes testing is a specific stressor with significant impact for many children.**

Given the increasing stress placed on students (and their teachers!), management of anxiety is vital. Nearly all students are required to take high-stakes tests that determine their futures. Self-calming and coping skills reduce test anxiety and increase focus and stamina for test-taking.

Moreover, well before the test is administered, self-calming skills maximize students' participation in the instructional setting, so that they remain on-task and benefit from the academic curriculum.

Studies Utilizing S.T.O.P. and Relax

Pilot Study:

Excerpt from *Creative RelaxationSM: A Yoga-Based Program for Regular and Exceptional Student Education*,
Goldberg, Louise, M.A., R.Y.T., L.M.T. *The International Journal of Yoga Therapy*, No. 14, 2004

Participants were upper elementary school children with autism from self-contained classes and regular education with support. The six students were chosen because their teachers and parents documented overt signs of anxiety and dysfunction under stress. They would soon make the transition to middle school, and they lacked some or many of the skills needed to cope with changes in their routine. One or more of them were prone to violent outbursts. Students were divided into two groups, and they participated in 30-minute sessions three times a week for approximately eight weeks.

Evaluation was by pre and post rating scales from teachers and parents; measurement of pulse rates before and after sessions; observation of students' breathing patterns and muscle tone before, during, and after exercises; teachers' observations of overt signs of stress vs. relaxation in target situations; and anecdotal reports from teachers, parents, and children who participated. Students were videotaped early and late in the training.

Evaluation results: Rating scales completed by parents and teachers demonstrated lower stress levels. In almost every session, pulse rates taken at the end of relaxation class were lower than they were at the beginning of the sessions. The mean pulse rate (based on a 10-second reading) before class was 17.577, and the mean pulse rate after class was 14.954. Using the two-sample-t-test, the difference was found to be statistically significant ($p < 0.01$).

In addition, students demonstrated deeper breathing and increased stillness, as evidenced by video clips from early and late in the training. Improved muscle tone enabled students to do more challenging postures and sit straighter. They were successful at following more complex instructions. Students demonstrated increased awareness of the parts of their body and how to move them. Their ability to fix the eyes on one point and balance on one foot increased significantly. Students learned to respond to verbal cues such as "relax" and "breathe." Classroom teachers reported increased alertness after sessions and more self-monitoring; teachers were able to use the relaxation cues to help children de-escalate in volatile situations.

Parents observed children using relaxation techniques during stressful situations and before bed. Students shared scenarios of using relaxation techniques and mnemonics to help calm themselves. One parent reported that her daughter was having a very difficult time when her dentist attempted to take impressions of her teeth. After several unsuccessful tries, she independently went through the S.T.O.P. mnemonic; she was then able to sit calmly while the dentist completed the impressions.

A Yoga and Mindfulness Study **Rebecca Barker, M.Ed.**

**The boy noted that he "felt calmer."
He said that he practiced his self-regulation
exercises (S.T.O.P. acronym) and that they
"totally worked" to help him calm down.
He said he practiced his breathing exercises
while home,
when he was mad at his sister,
or during recess when he felt hyper.**

Anecdotal Reports from Teachers and Students

Self-Contained Class for Students with Autism Disorders

"One of my students usually becomes aggressive when upset. Today I reminded him to use the S.T.O.P. procedure. He calmed himself down!" – *Teacher of a self-contained ASD class*

"When one of my students is getting upset or agitated, another will bring the S.T.O.P. card to him and help him." – *Teacher of a self-contained ASD class*

General Education Class with Inclusion of Special Education Students

A fifth-grade teacher initiated S.T.O.P. and Relax in his classroom, which included general education students and special education students with varying disabilities, including ASD, ADHD, and bipolar disorder. The students later wrote about their use of the self-calming skills in various contexts.

Tests

"I was about to take the test. I was very stressed. But I remembered 'S.T.O.P.' When I was done with the positions I was very relaxed." – *B*

"I had to use 'S.T.O.P.' when I came to a problem I didn't know." - *N*

Relationships:

"I know it works because when I get mad at my sister, I use it. Trust me, it works really good." – *J*

"She was taking my stuff without permission. While I was arguing with her, I remembered. I did 'S.T.O.P.' and I felt better." - *A*

Recreational activities:

"Every Saturday I use it for bowling." – *J*

"When I was playing my video game I was stuck on a part and I used 'S.T.O.P.' to help me beat the part of the level. It worked." - *E*

Helping Others:

"My mom was stressed, so I taught her to 'S.T.O.P.' and that really helped her to calm down." - *A*

Summing It Up:

*"I don't know how they did it
but they made relaxation work."*

- *L*

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Louise Goldberg, co-author of S.T.O.P. and Relax, has worked extensively with exceptional students and their teachers, therapists, and coaches since 1981. She has provided instruction and mentoring for the Broward County Schools, Center for Autism and Related Disabilities, and Yoga Institute of Broward. Ms. Goldberg's knowledge and skills are highly valued within the education and yoga communities. Her articles have been published in the International Journal of Yoga Therapy. Presently Ms. Goldberg is working with Norton Publishing, authoring a book about yoga for children with special needs,

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