



Science Behind the Story (SBS)
I Am So Stressed Out!!! (🌈 An Emotional Health Story)
(4th Grade – 9-10 yrs)

This story talks about stress and how it relates to emotional health and behaviors.

- 🌈 A little bit of stress prepares our bodies for action and activates our sympathetic nervous system – also known as the “fight or flight” system. Too much stress can actually hurt your body and your brain.

Stressful stimuli activate the, sympathetic nervous system, which part of the autonomic nervous system (Breedlove, 2020). The sympathetic nervous system gets your body ready to get away from whatever stressful stimuli you encounter. It is known as the “fight or flight” system because the parts of the nervous system that makes up the sympathetic system increases your heart rate and your lung function, while decreasing your digestive system (Breedlove, 2020). This allows more oxygenated blood to get to the parts of your body that will help you out of the stressful situation. While not all stressful situations are “life and death”, meaning we do not always have to “fight or run”, activation of the sympathetic nervous system can also get you ready to perform certain behaviors, such as taking an exam, performing in a play or sport, or meeting new people. Activation of the sympathetic nervous system for short periods of time can actually helpful, however activation for prolonged periods of time can cause damage to you body and your brain (Musazzi, 2017; Sapolsky, 2005).

- 🌈 Stress acts on the same parts of your brain that control your emotions, so you need to identify how stressful situations make you feel and act and what kinds of situations you find stressful.

It is well known that stressful situations can cause people to behavior in some very negative ways. These bad responses during stressful situations are caused because the autonomic nervous system also acts on the parts of the brain that control your emotions (Dalgleish, 2004). So, if you are particularly angry at someone for no reason or if you feel like crying when the situation you are in is not really sad, then most likely it is because you are stressed out and your emotional state is not normal.

The best way to control your emotional behaviors is to first identify what is stressing you out (Ochsner, 2005). If you can identify the types of events that stress you out, then you can try to find a way to deal with the stressful situation. A stressful event is defined as a situation that you feel you have no control over (Kim, 2002). You can take control of the stressful event by avoiding that situation, which is not always possible, or you can figure out ways to deal with the stress so that you can avoid damage to your body and your brain (Skinner, 2019) – not to mention damage to your relationships with others if you exhibit inappropriate emotional behaviors.

- 🌈 By understanding how your emotions and behaviors change when you are stressed out, you can then control how you react to the stressful situation. This will help you to feel better about yourself and the situation, which is important for protecting your brain.

Understanding that certain stressful situations change the way you feel emotionally and may even change how you are behaving is important and will enable you to control both your emotions and behaviors

(Folkman, 2008). In many circumstances, understanding what is happening in your brain in response to the stressful event will be enough for you to be able to control what is happening. When you have control over your emotions and your behaviors, this will make you feel better about yourself which is definitely important for your brain health.

National Standards:

Next Generation Science Standards

- Crosscutting Concepts:
 - **Structure & Function:** The way an object is shaped or structured determines many of its properties and functions.
 - Different materials have different substructures; which can sometimes be observed.
 - Substructures have shapes and parts that serve functions.
 - **Stability & Change:** For both designed and natural systems, conditions that affect stability and factors that control rates of change are critical elements to consider and understand.
 - Change is measured in terms of differences over time and may occur at different rates.
 - Some systems appear stable, but over long periods of time will eventually change.
 - **Cause & Effect:** Events have causes, sometimes simple, sometimes multifaceted. Deciphering causal relationships, and the mechanisms by which they are mediated, is a major activity of science and engineering.
 - Cause and effect relationships are routinely identified, tested, and use to explain change.
 - Events that occur together with regularity might or might not be a cause & effect relationship.
- Related Grade Level Content
 - **Structure, Function, and Information Processing**
 - 4-LS1-1: Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.
 - 4-LS1-2: Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.

ASCA (American School Counselors Association):

Academic Development

- **Standard A:** Students will acquire the attitudes, knowledge and skills that contribute to effective learning in school and across the life span.
 - A:A1 Improve Academic Self-Concept
 - A:A1.5 Identify attitudes and behaviors that lead to successful learning
 - A:A2 Acquire Skills for Improving Learning
 - A:A2.1 Apply time-management and task-management skills
 - A:A2.2 Demonstrate how effort and persistence positively affect learning
 - A:A2.3 Use communications skills to know when and how to ask for help when needed
 - A:A2.4 Apply knowledge and learning styles to positively influence school performance.

Personal/Social Development

- **Standard A:** Students will acquire the knowledge, attitudes and interpersonal skills to help them understand and respect self and others.
 - PS:A1 Acquire Self-knowledge
 - PS:A1.4 Understand change is a part of growth
 - PS:A1.5 Identify and express feelings
 - PS:A1.6 Distinguish between appropriate and inappropriate behavior.
 - PS:A1.8 Understand the need for self-control and how to practice it.
 - PS:A1.10 Identify personal strengths and assets

- PS:A1.11 Identify and discuss changing personal and social roles
 - PS:A1.12 Identify and recognize changing family roles
- **Standard B:** Students will make decisions, set goals and take necessary action to achieve goals.
 - PS:B1 Self-knowledge Application
 - PS:B1.1 Use a decision-making and problem-solving model
 - PS:B1.2 Understand consequences of decisions and choices
 - PS:B1.3 Identify alternative solutions to a problem
 - PS:B1.4 Develop effective coping skills for dealing with problems
- **Standard C:** Students will understand safety and survival skills.
 - PS:C1 Acquire Personal Safety Skills
 - PS:C1.10 Learn techniques for managing stress and conflict
 - PS:C1.11 Learn coping skills for managing life events

National Health Education Standards (Shape America) & CDC (Centers for Disease Control and Prevention)

- **Standard 1:** Students will comprehend concepts related to health promotion and disease prevention to enhance health.
 - 1.5.1: Describe the relationship between healthy behaviors and personal health. **(CDC)**
 - 1.5.2: Identify examples of emotional, intellectual, physical, and social health. **(CDC)**
- **Standard 5:** Students will demonstrate the ability to use decision-making skills to enhance health.
 - 5.5.1: Identify health-related situations that might require a thoughtful decision. **(CDC)**
 - 5.5.2: Analyze when assistance is needed in making a health-related decision. **(CDC)**
 - 5.5.3: List healthy options to health-related issues or problems. **(CDC)**
 - 5.5.4: Predict the potential outcomes of each option when making a health-related decision. **(CDC)**
 - 5.5.5: Choose a healthy option when making a decision. **(CDC)**
 - 5.5.6: Describe the outcomes of a health-related decision. **(CDC)**
- **Standard 7:** Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.
 - 7.5.1: Identify responsible personal health behaviors. **(CDC)**
 - 7.5.2: Demonstrate a variety of healthy practices and behaviors to maintain or improve personal health. **(CDC)**
 - 7.5.3: Demonstrate a variety of behaviors to avoid or reduce health risks. **(CDC)**

References:

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