

Making Neuroscience Fun



A Brain Awareness Program for All Ages
It's SPECTacular!

Science Behind the Story Keeping Your Brain Healthy: It's SPECTacular! (Pre-Kindergarten – 4-5 yrs)

This story explains what a healthy brain is all about.

🌈 It is important to keep your brain healthy.

The main role of the brain (nervous system) is to keep you alive. The nervous system receives, processes, stores information and produces a number of physiological responses (behaviors).

Everything that you do, see, feel, taste, touch, hear is received by your nervous system (Cao, 2019).

The nervous system then “processes” that information in relation to other information it has encountered. The nervous system then “stores” the information based on a number of factors and in multiple places. The nervous system then “produces” behaviors which help to keep you alive.

Because our brain (nervous system) is so important, we need to take care of our brain and keep it healthy.

🌈 What is a healthy? What is SPECTacular?

When we are healthy, we are not sick. Your brain needs to be healthy so that it can work with your body to help you do all the things you need to do to survive in the environment you live in.

If your brain is not working properly (if it is sick or damaged), then you may not be able to do the behaviors you need to do to stay alive; eating, drinking, sleeping, etc.

🌈 There are 4 things you can do to keep your brain healthy; loving yourself and others (social), making your body move – getting sleep – and eating (physical), understanding and taking care of your emotions (emotional), and thinking (cognitive).

There are a number of studies that point to the role of social health, physical health, emotional health and cognitive health as components of a healthy brain.

Social health for pre-kindergarten age children focuses on the development of a sense of self (Malik, 2020) as well as the realization that others have a different view of the world than their own (Astington, 2008).

As this is an age of tremendous development for both the body and the brain, sleep, proper nutrition and physical activity are all necessary (Hosker, 2019; Belcher, 2020).

Being able to recognize and regulate one's own emotions, as well as empathize with others is all part of the development of emotional intelligence that occurs at the age (Helion, 2019).

Cognitive skills develop at different rates in children at this age (Piaget, 1952; Vygotsky, 1978), so it is important to help children realize that everyone learns in different ways (verywellmind.com).

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.
 - **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.
 - **Energy & Matter:** Tracking energy and matter flows, into, out of, and within systems helps one understand their system's behavior.

ASCA National Standards for Students (American School Counselors Association):

- **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:A1.1 Develop positive attitudes toward self as a unique and worthy person

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.
 - 1.2.1: Identify that healthy behaviors impact personal health.
 - 1.2.2: Recognize that there are multiple dimensions of health.

References:

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<https://www.verywellmind.com/cognitive-developmental-milestones-2795109>