

BRAIN-BASED LEARNING

Move Your Body, Grow Your Brain

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Editor's note: This post is co-authored by Marcus Conyers (1) who, with Donna Wilson, is co-developer of the M.S. and Ed.S. Brain-Based Teaching (2) degree programs at Nova Southeastern University. They have written several books, including Five Big Ideas for Effective Teaching: Connecting Mind, Brain, and Education Research to Classroom Practice (3).

Incorporating exercise and movement throughout the school day makes students less fidgety and more focused on learning. Improving on-task behavior and reducing classroom management challenges are among the most obvious benefits of adding physical activities to your teaching toolkit. As research continues to explore how exercise facilitates the brain's readiness and ability to learn and retain information, we recommend several strategies to use with students and to boost teachers' body and brain health.

Like "Miracle-Gro for the Brain"

Exercise may have both a physiological and developmental impact on children's brains. Physical mechanisms include:

- Increased oxygen to the brain that may enhance its ability to learn
- Alterations to neurotransmitters
- Structural changes in the central nervous system

In fact, John Ratey, author of *A User's Guide to the Brain*, calls exercise "Miracle-Gro for the brain" because of its role in stimulating nerve growth factors.

Studies suggest that regular physical activity supports healthy child development by improving memory, concentration and positive outlook. For example, researchers found that children who had an opportunity to run 15-45 minutes before class were less distracted and more attentive to schoolwork. These positive effects lasted two to four hours after their workouts.

The connection between learning and exercise seems to be especially strong for elementary school students. Given these findings, cutting back on physical education with the aim of improving academic performance, as some districts have done or may be considering, is likely to be counterproductive.

Pump Up Your Brain with Regular Exercise

Regular physical activity is an essential component for maintaining body and brain health for people of all ages. A recent study involving 120 people found that walking briskly 30-40 minutes a day three times a week helped to "regrow" the structures of the brain linked to cognitive decline in older adults. The effect was the equivalent of stopping the brain's aging clock by one to two years. This is one of the first scientifically controlled studies showing the power of exercise in boosting brain regeneration. As we share with educators in our programs, physical activity before, during and after school is smart for your heart, body and brain. "Exercise is really for the brain, not the body," Ratey contends in a WebMD article. "It affects mood, vitality, alertness and feelings of well-being."

By incorporating movement and physical activity into the school day, you can support student learning in a variety of ways:

Start the Day with Movement

Many teachers we know start the school day with exercises such as jumping jacks, arm crosses and stretches. Kim Poore, who teaches K-5 students with behavioral and emotional disorders in South Carolina's Lancaster County Public School District, tells us that her class has led the school in a morning warm-up routine broadcast to classrooms over closed-circuit TV.

Enhance Attention During and Between Lessons

Incorporating short exercise or stretch breaks into lessons can sharpen children's focus on learning. Especially for younger students, dividing lessons into 8-20 minute "chunks" punctuated with activities that involve movement keeps their attention on learning and helps make the content more memorable. Exercise and stretch breaks also work well during transitions between lessons.

Ms. Poore says that one of her students' favorite ways to prepare for tests is with "Snowball." She writes a test review question on a piece of paper, wads it into a paper ball, and tosses it to a student who opens the paper, responds to the question and tosses it back. "It is a fresh and effective way to reach these kids," she says.

Engage the Senses

Our brains receive input from our visual, tactile, auditory and olfactory senses, allowing us to engage with the rest of the world. Incorporating activities that involve all the senses can make learning more memorable. Joe Frank Uriz, who teaches Spanish at Parsons Elementary School in Gwinnett County, Georgia, says, "Sensory experiences are an important aspect of learning."

Mr. Uriz doesn't just teach third graders the Spanish words for fruits. He introduces the tropical fruits of the Americas in a "mystery box" activity that adds tactile, smell and taste

experiences to learning. And he makes the most of the power of music and movement to reinforce what students are learning with a clapping chant song called "Frutas."

Play Games

Teaching lessons as active games also enhances attention and memory. How about a kinesthetic spelling bee in which teams of students spell vocabulary words by positioning their bodies in the shapes of letters?

What physical activities do you incorporate into your lessons? Please tell us about them in the comments section below.

References and Resources

Articles from the *Journal of Play* (4) and WebMD (5) present some of the research on exercise and learning.

This list of BrainBreaks (6) offers additional ideas on movement during the school day. For more information on the body-brain connection, see Chapter 5 of *Five Big Ideas for Effective Teaching: Connecting Mind, Brain, and Education Research to Classroom Practice* (7).

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- 5 www.webmd.com/fitness-exercise/features/train-your-brain-with-exercise
- 6 www.emc.cmich.edu/BrainBreaks/2005/TOC.htm
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