

Exercise and the Brain: How Exercise Can Improve Academic Performance for Your Child

Think a treadmill is only good for your heart and lungs? Think again. Turns out that a mere half hour jogging on one can help a student solve problems up to **10 percent** more efficiently. In fact, the more physically active that children and adolescents are, the better they perform academically. Want your child's literacy scores to double? Start the morning with cardiovascular exercise. Want to see an improvement on coordination and memorization tasks? Try resistance training. According to research from the University of North Texas, maintaining a healthy body may be *one of the most important factors* in determining a student's success in math and reading.

There is a myriad of research supporting the idea that students need more physical activity. While exercise helps prevent obesity-related illness, it also increases academic performance. As stated by the **Centers for Disease Control and Prevention**, "...physical activity can have an impact on cognitive skills and attitudes and academic behavior, all of which are important components of improved academic performance. These include enhanced concentration and attention as well as improved classroom behavior."

Why exercise impacts academics

There are many reasons for the connection between physical activity and academic performance, beginning with its impact on the development of the brain. Researcher **Charles Basch from Columbia University** outlined how exercise affects executive functioning of the brain:

- "[Increased] brain-derived neurotrophins that support neuronal differentiation and survival in the developing brain." Neurotrophins help the survival of neurons in areas responsible for learning, memory and higher thinking;

- Increased flow of oxygen to the brain;
- Increased brain neurotransmitters.

In **brain scans** immediately following 20 minutes of sitting sedentary versus 20 minutes of walking, the amount of neural activity is apparent. In children who spent the time sitting, minimal activity is observed. In other words, little brain activity is evident. In children who spent the time moving, however, substantial brain activity takes place. More, the benefits increase over time so that a child who exercises consistently through a 9-month time frame sees more benefit than a child who exercises frequently over a mere month.

Three-pronged approach

Arguably, there are more ways to improve a child's physical activity level than the three suggestions listed here. However, the most common approaches tackle three main areas: school life, home life and professional intervention. The CDC recommends that children and adolescents participate in at least 60 minutes of physical activity daily. For the most benefits, the majority of exercise should be aerobic, with some time spent doing muscle-strengthening exercises and some time spent doing bone-strengthening activities.

School life

With an increased focus on standardized testing and Common Core standards, there has been an unfortunate decline in physical fitness offerings in school. This is detrimental to children's physical and mental health, as well as academic achievement. One way to improve this is to increase the time spent in P.E. classes. Before and after-school activities should also be offered, and teachers of academic courses can incorporate physical coordination into lesson plans.

Home life

Families can model healthy behaviors by participating in sports together, going on walks, partaking in physical activities and generally spending time away from

the couch. Children's first teacher is at home, and this is often where healthy choices are either encouraged or discouraged.

Professional intervention

Many families struggle to know the best exercise regimen for their child (or themselves). As such, they turn to professionals, such as pediatric physical and occupational therapists, to develop a plan. These therapists can help people become active while reducing unnecessary pain. They can guide students through physical movements and teach safety measures important to success. Often, they will measure a child's current fitness level to develop a plan appropriate to the child's needs.

If you're seeking professional insight and want help encouraging your child to become more physically active, consult with a pediatric therapist for guidance.