



Boosting the Brain Power: Back to School Tips for Success

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An essential element to school success is the complex process of learning. Key to this process is the child's development of executive functioning; which are the mental processes of reasoning, working memory, task flexibility, planning and problem solving. There are two times in a child's life when executive function develops, the first and most rapid development is during the elementary school years; a second slower period of development occurs in adolescences.

Parents may assist in the development of their child's learning experiences by supporting three areas proven to influence the mental ability development in children: physical activity, nutrition and adequate sleep.

These three simple areas are foundational in supporting your child's school performance but are very challenging to put into place when there are conflicting schedules and the time demands of back to the school routine. The best success for helping your child return to the demands of the school year is best achieved by planning ahead.

Physical Activity

Homework beckons but let them play! Not only is it good for the body it is good for the mind; exercise improves focus, memory skills and academic skills. The benefit of physical activities extends beyond the fitness of body response. Physical activity and fitness levels have shown to be beneficial to brain health and better performance on measures of school performance in children ¹. Physical activity is important to well-developed executive functions for daily life. Participation in physical activity, as short as 20 minute sessions, can benefit a variety of the cognitive functions of the brain including aspects of concentration, increased attention and the speed of information processing. Children with and without Attention Deficit Hyperactivity Disorder (ADHD) have shown enhanced performance after exercise on reading comprehension and arithmetic activities ² There are a few reasons physical activity may bring about the enhanced academic performance in a very complex and multi factored process. It is proposed that it may be a combination of the increasing the flow of oxygen and glucose to the brain, the influence on the neurotransmitter levels (messenger system of the brain) promoting memory or by increasing the blood supply system to the cerebral cortex, that area of the brain responsible for memory and learning

^{2,3}Though the exact process of how this works is not known, promoting fitness through physical activity may support academic achievement ⁴.

Your child is active every day? That is great and you will want to support that they continue with daily physical activity. Family social support is beneficial in promoting children's participation in after school and weekend physical activities ⁵. So go ahead and let them be physically active for 20 – 30 minutes before sitting them down to do their homework. The more physical activity a child engages in, the greater the physical and mental benefits.

Nutritional intake: Meal Time

Not all meals are created equal. The hippocampus has needs! This area of the brain is responsible for memory, organization and the storing of information. Just like needing to put gas when the car is on E, the brain needs regular inputs of energy to function. Creating and maintaining the connections for learning and academic performance requires proper building blocks for the brain to complete these activities. Children eating a nutritionally balanced breakfast have significantly higher brain activation when performing learning tasks that require cognitive activities than those children that have skipped breakfast or having something sugary for breakfast ⁶.

The hippocampus' ability to function is susceptible to low levels of Omega-3's and the adverse effects of a high intake of fructose (sugar). Omega-3s are members of the essential fatty acids and play a significant role in the development and growth of the brain. The human body is not able to produce essential fatty acids making it necessary to get them from outside sources to provide this essential building block for brain growth and development.

What do you need to do? You need to increase the intake of Omega-3's and decrease the intake of fructose (sugar). Choose foods in their whole or natural form. Whole berries or whole fruit in place of fruit juice or sweet drink will decrease the intake of sugar. Omega-3's may be found in foods such as oily fish which include salmon, mackerel and trout. All children will eat these, right? Not likely! Other sources may be walnuts, flaxseed, humus and avocados. However if they are like mine there was more success with certain foods such as peanut butter, milk and eggs which are fortified with Omega'3s. Help your child explore new foods but be wise in your selection choosing those that are nutrient dense not calorie or sugar dense. Wise lifestyle choices and eating behaviors will improve your child's ability to learn and perform in school.

Sleep

I don't want to go to bed! So the nightly routine begins. Sleep is as important to the to a child's school performance as keeping them physically active and regularly eating nutritious foods. Even small amounts of differences in sleep duration over just a few nights can influence your child's daytime functioning at school and their behavior ⁷. Sleep is important for learning, memory activities and the brain's ability to respond to new information it is receiving. When the brain receives new information it needs to reorganize the experience so that it will be able to retain that information. Sleep or the loss of sleep directly influences the brain's ability to do this necessary step in learning. Shorter sleep duration is

also linked to behavioral problems. Children that have shorter sleep duration may have difficulty paying attention and exhibit behaviors of hyperactivity similar to that seen in children with ADHD⁸.

Sleep requirements will vary for each child⁹. The goal is to get enough sleep that the child wakes refreshed and is able to remain alert and active throughout the day. The current recommendation for children between 5 – 13 years of age is approximately 10 hours per night. Those children that have parent-set bedtimes on school nights typically have earlier bedtimes and more sleep on school nights, less daytime fatigue and less trouble staying awake during the day¹⁰. You can help establish the best sleep duration for your child by setting a school night bedtime that will allow your child to wake feeling rested and able to be active throughout the day. This can be different for each child even in the same family. It is believed that it is the parenting practices that play the largest role in the bedtime compliance¹¹; time to step it up parents.

Summer time schedules play havoc with routine bedtimes. You will want to help your child adjust to the back to school routine by starting a week or two before school is to start. A simple way would be to shift the going to bed time back by 30 minutes each night until the child is back to their needed school night bedtime. Falling asleep may be an issue for the first few nights. You may help them by developing a routine that allows them to unwind, relax and get ready for sleep. Avoid electronics and physical activity for the hour or two before you want them to get into bed. Aromatherapy using essential oils such as lemon balm, sandal wood or lavender may be used during the bedtime routine to relax and soothe. Quiet time with a parent reading is also a good activity to transition to sleep.

Successful transitioning to the school routine will take coordination and planning on part of the parent. Now is the time to make that menu, stock the pantry and set the alarm clock. Making a schedule that allows for enough sleep, physical activity and time to eat the needed meals each day will help you and your child transition back to school with success.

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