

Breakfast and cognitive performance in elementary grade children article review S...

[Profession](#), [Student](#)



Good nutrition is critical for growing children, both for physical and cognitive development. Elementary age children are challenged every day in school and a nutritious and balanced breakfast is critical for them to learn. Many studies have been completed that consistently demonstrate the importance of a good breakfast on learning.

According to a study completed by Anjos et al (2013), good nutrition begins with expectant mothers and continues throughout a child's life from infancy to childhood. The acquisition of nutrients is important for proper brain development. The authors have implemented a large scale research project named NUTRIMENTHE which is examining the effects of nutrition on physical and cognitive development in children throughout Europe. The authors state that brain development during the last trimester of pregnancy through age two is rapid and crucial. Development slows down greatly after this period. Nutrition during this time is critical for later success in learning and continuing development. Specific nutrients such as copper, zinc and chlorine are essential to the physical development of the brain. Folate during pregnancy ensures neural development of the fetus. Zinc helps to ensure cell growth as well as iron (Anjos et al. 2013).

Fiber has long been associated with healthy colons in adults, but a recent study by Kahn, Raine, Drollette, Scudder, Kramer & Hillman (2015) showed the importance of fiber in children's diets to help their learning and focus. The researchers studied food journals of 65 children ages 7 to 9. They calculated the total fiber intake of the children over the course of several days and observed the children's attention while completing a Flanker task. The study showed a direct correlation between high intakes of fiber with the

ability to maintain attention to completing the task. Other factors such as socio-economic status, sex and race were not factors that affected the children's performance according to the study. The authors suggest that a breakfast that consists of foods high in fiber would be beneficial to children's ability to maintain attention to learning tasks throughout the day (Kahn, Raine, Drollette, Scudder, Kramer & Hillman 2015).

The hippocampus is a part of the brain that is responsible for both emotion and memory. One research study reviewed previous literature and experiments of the hippocampus and the effects of both exercise and nutrition on this area of the brain (Monti, Baym & Cohen 2014). The authors found that the hippocampus performs better with memory related tasks when subjects participated in an exercise regime and ate a healthy diet. Flavonoids and omega-3 fatty acids both have a positive effect on the functioning of the hippocampus and working memory. The study also revealed that the intake of refined sugar and saturated fat were detrimental to the performance of the hippocampus. It is important to note that this was a very general study that looked at the effects of nutrition and exercise across all age groups as well as rats (Monti, Baym & Cohen 2014).

In a review of previous literature, Rodgers (2010) looked at the link between micronutrients such as vitamins and minerals and the behavior of children in schools. The author cites a multiyear study in an elementary school that was plagued by low achievement scores and behavioral problems. Over the course of several years the children were given vitamin supplements, received nutrition education and were fed healthy breakfasts and lunches that included fresh fruits and vegetables and eliminated fried foods. Over the

course of the study, behavior problems diminished and test score improved (Rodgers 2010). In another study in a Phoenix, Arizona elementary school, students were randomly assigned to two groups. One group received a multivitamin every morning, the other group received a placebo. The group that received the vitamin exhibited lower rated of behavioral problems compared to the group that received a placebo (Rodgers 2010).

In a British study of the effects of breakfast on learning and attention, a group of students were divided into three groups. One group omitted breakfast, one group received a high sugar cereal for breakfast and the last group received a low sugar cereal. The group that received the low sugar cereal demonstrated better behavior and a higher focus on learning. The other two groups exhibited a lack of attention and focus. The students were given the breakfasts by the researchers who observed their behavior and also administered tests that measured focus. The researchers also took blood sample to measure glucose levels in the students. The findings concluded that the students who received the low sugar cereal performed best (Cooper, Bandelow, Nute, Morris & Nevill 2011).

A well balanced diet rich in a variety of nutrients is important but how do parents get their children to make healthy food choices? In an experiment designed and executed by Baskale and Bahar (2011), five to six year old children who received an education on good nutrition demonstrated better food choices and a healthier diet than children who did not receive the lessons. Prior to the introduction of the lessons, the researchers found that the most popular foods consumed by the children were: fruit juice; pizza; chips; fried potatoes and carbonated drinks. Some of the activities that the

children participated in were role playing, classifying foods and games. All of the lessons focused on making positive food choices. At the conclusion of this quasi-experiment, the children who received the lessons were choosing to eat more vegetables and healthier proteins (Baskale and Bahar 2011). After reviewing the literature, a nutritious breakfast is critical to learning successfully for children. A low sugar, high fiber breakfast and a nutritional supplement have all be proven to enhance learning, attention, focus and memory. Recent research is also singling out omga-3 fatty acids as being a beneficial micronutrient for children as well as adults. It is important for parents to ensure that their children leave the house every morning with a healthy meal in their stomachs to ensure their success in school.

References

Anjos, T., Altmae, S., Emmet, P., Tiemeier, H., Closa-Monasterolo, R., Luque, V., . . . Compoy,

C. (2013). Nutrition and neurodevelopment in children: Focus on NUTRIMENTHE project.

European Journal of Nutrition, 52(8), 1825-1842. Retrieved from: <http://eds.a.ebscohost.com>

[/eds/pdfviewer/pdfviewer?sid= cf8647d2-bcb4-4c6c-8607-6fa2245849a%40sessionmgr4004&vid= 4&hid= 4105](http://eds/pdfviewer/pdfviewer?sid=cf8647d2-bcb4-4c6c-8607-6fa2245849a%40sessionmgr4004&vid=4&hid=4105)

Baskale, H. & Bahar, Z. (2011). Outcomes of nutrition knowledge and healthy food choices in

5 to 6 year old children who received a nutritional intervention based on Piaget's theory.

<https://assignbuster.com/breakfast-and-cognitive-performance-in-elementary-grade-children-article-review-sample/>

DOI: 10. 1111/j. 1744-6155. 2011. 00300. x

Cooper, S., Bandelow, S., Nute, M., Morris, J. & Nevill, M. (2012). Breakfast glycaemic index

and cognitive function in adolescent school children. *British Journal of Nutrition*, 107,

1823-1832. DOI: 10. 1017/S0007114511005022

Khan, N., Raine, L., Drollette, E., Scudder, M., Kramer, A. & Hillman, H. (2015). Dietary

fiber is positively associated with cognitive control among prepubertal children. *Journal*

of *Nutrition*, 145(1), 143-149. Retrieved from: <http://eds.a.ebscohost.com/eds/detail/detail?>

[vid=7&sid=cf8647d2-bcb4-4c6c-8607-46fa2245849a](http://eds.a.ebscohost.com/eds/detail/detail?vid=7&sid=cf8647d2-bcb4-4c6c-8607-46fa2245849a)

[%40sessionmgr4004&hid=4105&](http://eds.a.ebscohost.com/eds/detail/detail?%40sessionmgr4004&hid=4105&)

[bdata=JnNpdGU9ZWRzLWxpdmUmc2NvcGU9c2l0ZQ%3d%3d#db=](http://eds.a.ebscohost.com/eds/detail/detail?bdata=JnNpdGU9ZWRzLWxpdmUmc2NvcGU9c2l0ZQ%3d%3d#db=)

[fth&AN=](http://eds.a.ebscohost.com/eds/detail/detail?fth&AN=)

[100170149](http://eds.a.ebscohost.com/eds/detail/detail?100170149)

Monti, J., Baym, C. & Cohen, N. (2014). Identifying and characterizing the effects of nutrition

on hippocampal memory. *Advanced Nutrition*, 5, 337-343. DOI: 10. 3945/an. 113. 005397.

Rodgers, J. (2010). Vitamins and violence: Can micronutrients make students behave, schools

safer and test scores better? *The Abell Report*, 23(6), 1-8. Retrieved from:

<http://files.eric.ed.gov/fulltext/ED547286.pdf>

<https://assignbuster.com/breakfast-and-cognitive-performance-in-elementary-grade-children-article-review-sample/>