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|  | Many of the world�s top athletes keep the strictest of diets, knowing that certain types of foods and drinks will better enhance their athletic performance. Still, there are some out there who believe that what you eat will have no influence on how they feel or behave. Contrary to this belief, many studies have proven that nutrition has a big impact on how you feel and act. Nutrition especially has an impact on children, who are just developing their behavioral traits and habits. Children are less likely to disguise or mask how they behave and thus are more helpful on studies in nutritional effects on behavior.  C. Keith Conners is the author of the book **Feeding the Brain: How Foods Affect Children**. In this book, Conners describes the nutritional studies conducted by himself and his colleagues on children and adolescents. Although the studies offer very believable and reliable evidence, much of it is tentative information. As Conners explains, most of his research is extremely expensive to conduct, and a child�s behavior is influenced by more variables than what they eat. Essentially, there are too many lurking variables to definitely conclude that nutrition is a causation of some behaviors. However, as Conners explains, certain foods and the chemicals in foods can act in the same manner that drugs or alcohol can. It is widely known that alcohol can impair normal brain function and act as a depressant on the human body. In this same sense certain foods that we eat can cause such effects on our body. However, with food it is harder to pinpoint the reactions that these foods trigger. Conners� research gave us some foods to research and study for our experiment.  In addition to the types of foods that children eat, the time of day, the amount they eat, the size of their body, and their behavioral outlets can also influence how the child reacts to the foods. Nutritionist Dr. Rita Lynne, of Pleasanton, helped to explain this to us in an interview on November 29, 1999. Lynne is a nutritionist who specializes in weight management. She works with eating disorders, people who are overweight, and athletes, such as marathon runners. She is also the author of **Financial Freedom for Women**, and many manuals for Nutrasystem. Although she specializes in weight management, she also has a significant amount of knowledge concerning children with ADD (Attention Deficit Disorder). According to Dr. Lynne, nutrition has a big impact on a child's behavior. She feels that many children, who have been diagnosed with behavioral disorders such as ADD and ADHD (Attention Deficit Hyperactive Disorder), may have been misdiagnosed. These disorders are usually classified by hyperactivity or short attention spans, along with many other symptoms. Often children diagnosed with these disorders are put on medication such as Rittalin. If the child does not require this medication it could act as more of a detriment to the child instead of being a helpful drug. Dr. Lynne said the cure to the child�s hyperactivity could be that they need to eat more frequently throughout the day, in between meals the child should have healthy snacks and this will decrease their hyper behavior.  Another problem in child's behavior is whether he or she is left-brained or right-brained. If the child is right brained, they are more inclined to be artistic or musical. A left-brained child will tend to be better in academic areas, such as math or science. Dr. Lynne believes that a right brained, artistic child who gets little exposure or experience in art will be more likely to exhibit symptoms of ADD. This could mislead parents and physicians. Dr. Lynne also recommended the books, **Left Brain Children in a Right Brain World** by Jeffrey Free, and **Indigo Child** by Lee Carroll and Jan Tuber, both of which deal with child behavior.  After hearing Dr. Lynne�s information, we decided to conduct a survey of child behavior versus nutrition, to see if when and what the child ate correlated with appropriate behaviors that were outlined in Mr. Conner�s book. In addition to using **Feeding the Brain**, we also used **Food Chemistry and Nutritional Biochemistry** by Charles Zapsalis and R. Anderle Beck. With these sources combined, we came up with a list of over 20 foods and/or chemicals in foods and behaviors that were linked with these foods. In the list we compiled, there were foods and chemicals from the five basic food groups as well as additives and preservatives that were not included in any of these groups.  First we will discuss the behaviors resulting from protein consumption. Many specific amino acids can effect how a child behaves. For example, high levels of the amino acid, tryptophan can trigger violent behaviors. Tyrosine, an amino acid that is abundant in meat, fish and poultry, can act as a stress reliever, and can cause a child to be more relaxed. However, valine, another amino acid, can block the effect of tyrosine. Low levels of iron, which is abundant in proteins, can cause anemia or fatigue. If the child eats a lot of meat the effects of iron will be more effective. If a child does not get enough zinc they could develop hypoglycemia. When protein is eaten at breakfast in high amounts, the child could become quieter during school and less likely to volunteer and participate in class. Vitamin B3, niacin, is also found in certain meats. Low levels of niacin can cause apathy, depression, irritability, memory loss, delirium, or even seizures. In a study "only 1/33 children failed to improve when supplemented with vitamin B3."1 Thiamin is an element of protein found in lean pork, wheat germ, liver, poultry, egg yolk, fish, dried beans, soybeans, and some grains. A thiamin deficiency can cause a child to become irritable and lethargic. If the child eats a breakfast composed primarily of proteins they may become very quiet and withdrawn while in school. However, if this protein breakfast has high amounts of sugar included then their academic performance will not be as drastically effected. Finally, an inefficient amount of protein can escalate ADD and ADHD symptoms in ADD and ADHD sufferers.  The next group of foods that we researched is carbohydrates. If a child eats a significant amount of carbohydrates and sugar, they could develop hypoglycemia. Many carbohydrates contain high amounts of Vitamin B. When an ADD sufferer eats high amounts of Vitamin B, the symptoms of the disorder will be alleviated. Many carbohydrates are high in fiber. High fiber consumption can trigger zinc deficiencies in children. This in turn can slow cellular growth. In contrast to a high protein breakfast, a high carbohydrate breakfast will trigger loud behavior in kids, and thus probably more participation and energy during the school day. However, this loud behavior could also lead to more disruptive behavior as well. There have also been studies indicating that high levels of carbohydrates will have lower I.Q. levels. However, high amounts of wheat bread will increase a child�s I.Q. because of the high levels of zinc. Niacin is also present in some carbohydrates, like whole-wheat cereals, and thus those effects are applicable to carbohydrates as well.  The next food group is the dairy group, which includes such foods as milk, cheese, and yogurt. A majority of dairy products contain high amounts of calcium. "Hyperactivity has also been observed with calcium deficiency."2 If a child does not get enough calcium, meaning they are not eating enough dairy products, then they could become hyperactive, irritable, socially withdrawn, fatigued and/or depressed. If the child drinks a lot of soft drinks in place of healthier drinks such as milk the child will likely become very irritable and apathetic. Vitamin B3 or niacin is also found in milk. The effects of this vitamin were discussed above.  In our research we found very little information about the fruit and vegetable group, and its effects on behavior. We did find some information, though. Some fruits such as bananas and pineapples contain the neurotransmitter serotin. If a child does not have enough serotin in their system violent behaviors could be triggered. Thus, it should be encouraged for a child to eat such fruits. Vitamin B, which is found in green vegetables, among other things, can relieve symptoms of ADD. Finally, if a child has some fruit juice in the morning with breakfast, studies show that their attention span will increase.  As we mentioned earlier, Dr. Lynne seemed to believe that many children are misdiagnosed with ADD. She beleives that this is partly because they have no creative outlets, and because of the high amounts of additives and preservatives in children�s diets today. "One study found that 82% of the children studied improved when removed from [ artificial colors and preservatives.]"3 These are found in sodas, candy, store bought desserts, and potato chips. Basically, all of the "junk food" today is filled with additives and preservatives that are detrimental to child�s health, and can cause negative effects on their behavior. For instance, in his book, Conners states that additives in general can irritate symptoms of ADD, and have been linked to children with poor academic performance. Additives are a very general term, and can also be called preservatives, antioxidants, stabilizers, thickeners, bleaching agents, buffers, acids, food colors, artificial sweeteners, and artificial flavoring. In Conners' book he included a case on the study of aspartame, which is an artificial sweetener ususally found in diet sodas. He told a story about a girl in the study who was a very successful high school student, who excelled in academics, was popular, and a star softball player. He found that she became "addicted" to diet soft drinks, and became withdrawn and very depressed. She stopped playing softball and the "only only enjoyment [she] was getting out of life as from [diet soda]"4**.** This case is very extreme, but Conners asserts that consuming artificial sweeteners, such as aspartame, can cause impulsive behavior, apathy, or depression.  In Conners book he mentioned that it is very hard to get an adequate sample size for a nutritional survey or experiment. For the most accurate and thorough studies, major funding is required, and Conners identified money as one his biggest detriments. By going to the local elementary schools and asking for a voluntary survey, we managed to avoid extensive costs. However, in order to ensure that we would get enough volunteers, we had to make our survey as simple as possible. In addition our survey was very broad, and so we chose to narrow our hypothesis. We decided to focus on children with problematic, disruptive behaviors such as hyperactivity, impulsiveness or irritability. After deciding on these behaviors we singled out the main foods that are thought to be connected with these behaviors. These foods we found are additives and artificial sweeteners. In addition to high amounts of these foods, low amounts of essential vitamins such as calcium will cause these behaviors. With our hypothesis narowed down, we began to analyze our surveys. | |
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