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## Are children really what they eat?

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## Are children really what they eat?

### Abstract

The idea of looking at the entire picture is what Vass (1984) referred to as "holism." This simply stated that people cannot be fully understood unless the mind and body are seen as having an integral relationships. To understand children's behavior by looking at it holistically would be a major undertaking, but it is important to keep this in mind. A more limited approach to understanding a child's behavior would be to look at sugar, caffeine, food additives, and food allergies as factors in hyperactivity of elementary age kids.

ARE CHILDREN REALLY WHAT THEY EAT?

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A Research Paper

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The Department of Educational Administration  
and Counseling

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of the Requirements for the Degree  
Master of Arts in Education

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by

Jerry Brown

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The idea of looking at the entire picture is what Vass (1984) referred to as "holism." This simply stated that people cannot be fully understood unless the mind and body are seen as having an integral relationships. To understand children's behavior by looking at it holistically would be a major undertaking, but it is important to keep this in mind. A more limited approach to understanding a child's behavior would be to look at sugar, caffeine, food additives, and food allergies as factors in hyperactivity of elementary age kids.

In conferring with parents and teachers about the behavior of large numbers of kids, there has never been a time when they said a child (student) of theirs was not effected by the sugar in their food product. Little mention, however, was ever given to other ingredients in the food. Hence, sugar is usually looked at as the "bad" ingredient in food products for children. Are their other "evils" in foods which effect our children's behaviors?

#### Effects of Food Products on Behavior

##### Sugar

Parents and teachers often report that foods containing large amounts of refined sugar (sucrose) produce detrimental effects on childrens' behavior (Rosen, Bender, Sorrell, Booth, McGrath, & Drabman, 1988). A significant relationship between

refined sugar and other calorie sweeteners and children's behavior has yet to be established. Reports that such substances influence behavior are based on anecdotal observations (often by parents and teachers) and inadequately controlled experiments. There is no evidence to support the theory that refined sugar causes any behavioral disorders (National Dairy Council, 1984).

As confusing as it is to parents and educators, so it also seems to be to those in the medical field. According to a study by Bennett and Sherman (cited in Rosen et al., 1988), 45% of pediatricians and family practitioners have recommended a low-sugar diet for at least some of the hyperactive children they treat. As with parents and teachers, family practitioners agree to the notion that sugar is the most ubiquitous toxin (Buchanan, 1984).

The few controlled experiments that have been conducted to investigate the effects of sugar on behavior have shown either salutary effects (Behar, Rapoport, Adams, Berg, & Cornblath, 1984) or no effects (Ferguson, Stoddart, & Simeon, 1986; Milich & Pelham, 1986). The latter seems to be more the rule than the exception.

A study done by Rosen, et al. (1988) examined the effects of high sugar condition, a low sugar condition, and a control aspartame condition (low in sugar but with a sweet taste) on

the behavior of 30 preschool and 15 elementary age children. The experiment was conducted at each school site, with five days spent on each condition.

Approximately 20-30 minutes following the completion of breakfast, the children were measured on several cognitive functions. Each day, teachers also completed the Abbreviated Connors Teacher Rating Scale (ACTRS) and a 10-point global rating scale. Observational measures were scheduled for each child for each day of the experiment.

The results from the study indicated that the ingestion of dietary sugar (sucrose) may have only a small effect on the behavior of children (Rosen et al., 1988). Specific factors may warrant more of an effect (i.e., size of the child, amount of sugar ingested, or long period of fasting before the intake of a sweetened food item).

The National Institute of Mental Health (NIMH) conducted a study with 30 boys between ages of two and six years (Crews, 1989). In a playroom setting each child received a lemon-flavored carbonated drink containing one of four sweeteners: sucrose, glucose, aspartame (Nutrasweet), or saccharin. After consumption of the sweetener, the child's rate of motor activity was measured with an acetometer.

In the NIMH study, aspartame seemed to cause a slight reduction in motor activity, but no other behavioral changes

were noted with any of the other three sweeteners. The conclusion is that any effects of the different sweeteners on motor activity and aggression were so subtle that they had little clinical importance (Crews, 1989).

Elementary age children are not the only age group observed and evaluated after the consumption of sugar. A study of juveniles was conducted at a detention center in Chesapeake, Virginia to see if a relationship existed between sugar consumption and antisocial behavior (Raloff, 1983). The study drastically restricted refined (white) sugar in detainees' diets and changes in antisocial behavior were measured from records kept daily by staff counselors. It found a 45 percent drop in antisocial behavior among the home's changing population.

It should be noted that this study was done eight years earlier than the previous two mentioned and was also not set-up looking at reliability and variance variables. This study altered other correctional facilities and those involved in working with children. Scientifically, the results may go unnoticed but, observationally, the results effected many people.

Sugar was looked at first because of its known "negative" effects on children's behavior. Hechtman's study (cited in Schaeffer, 1988) found that only some kids do better with a

no (low) sugar diet. Why then all the fuss from parents and educators about all that "bad" sugar? There may be other reasons why kids become more hyper with the ingestion of sugar.

The ingestion of large amounts of sugar is often associated with certain events (such as birthday parties) that may evoke disruptive behavior. Parents and teachers may associate the two when the real cause is simply the lack of structure inherent in these situations (Rosen et al., 1988). As the parties in school wind down, whether it is time to get back to work or go home, children will have a hard time with all the excitement of the day. This may have little to do with the ingestion of sugar, but more with the activities involved.

### Caffeine

Children drink large amounts of soda pop today. Not only may the sugar in the pop effect behavior, but also the caffeine found in so many brands may cause behavioral disruptions.

The excessive daily ingestion of caffeine in the form of coffee, soda pop, and tea may lead to a chronic disorder known as "caffeinism." Adults drink caffeinated beverages to keep them awake because it is a behavioral stimulant. Children drink pop (caffeinated or caffeine-free) because it is good. Because of the large amounts of pop consumed today

by children, caffeine is being considered as a factor in the hyperkinesis of some children.

Baer (1987) conducted a study to overcome some of the problems in previous studies, such as the interaction of sugar and caffeine. This included doing a study in the child's natural setting and administering pop with caffeine but without sugar. Six five year old children (four boys, two girls) who attended kindergarten were the subjects. The children experienced several weeks of the caffeinated cola condition, followed by several weeks of the caffeine-free cola condition, followed by reversal to the caffeinated cola condition.

The results suggested that caffeine had only a small and inconsistent effect on the behavior of the subjects. This study was the most naturalistic study found to date on the effects of caffeine on children's behavior. Previous studies have shown that caffeine may increase restlessness, fidgetiness, and sustained attention. However, several methodological difficulties render such findings inconclusive according to Baer (1987).

#### Food Additives

By definition, food additives are considered substances whose deliberate use by the food industry causes the food to be changed in some way (Pauli, 1984). It has been hypothesized that foods containing artificial colors, flavors, and a

salicylate substance foods cause hyperactivity among elementary age children.

One of the biggest advocates of this statement is Dr. Benjamine Feingold. In 1973 he used a dietary approach for treatment of hyperactivity. His regimen eliminated "processed" foods with artificial flavors, colorings, and most preservatives. Dr. Feingold told a consensus panel that these dietary restrictions may help up to 50% of all hyperactive children (Hadley, 1984). This diet has thus become the most widely publicized and controversial therapy for hyperactive children. Many foods are forbidden on this diet. However, Hechtman (cited in Schaeffer, 1988), of the Montreal Children's Hospital, said that behavior from additives is still unproved. Since 1973, millions of dollars have been spent testing Feingold's hypothesis.

A meta-analysis was conducted in 1976 to assess the validity of the Feingold hypothesis. This search yielded 23 studies (Kavale & Forness, 1983). The goal of the analysis was to combine systematically the results of independent studies in order to obtain maximum information from existing research. The findings of this meta-analysis do not offer support for the Feingold hypothesis. A child placed on the Feingold diet may exhibit slight improvement in behavioral

functioning, but not much else when compared to a child not treated with the Feingold diet.

A report was done by the American Council on Science and Health (ACSH). After looking at conditions present in the Feingold diet, they came up with a position statement about the effectiveness of the diet. They concluded that artificial food colorings, artificial flavors, and the salicylate-containing foods specified by Dr. Feingold are not significant causes of hyperactivity alone (American Council on Science and Health, 1981).

Research reports on the Feingold diet have offered little support to its usefulness. If parents would go with its implementation, changes could accompany its use. The diet requires an abrupt change in lifestyle since increasing vigilance is necessary in grocery shopping and food preparation. Families generally cannot eat in restaurants, and the child cannot eat school lunches (Hadley, 1984). The Feingold diet is indeed a very difficult and very different diet to maintain and practice (Kavale & Forness, 1983).

#### Food Allergies

In 1980, Crook (cited in Vass & Rasmussen, 1984) surveyed parents of hyperactive kids. Most of the parents he surveyed reported that their child's behavior was related to specific foods in the diet. It was concluded that: "Based on reports

that have appeared in the literature during the last 60 years, and on my own clinical experience, I am absolutely certain that what a child eats can make him dull, stupid, or hyperactive" (p. 242).

The study of the effects of allergies on human behavior is called Clinical Ecology, which is a relatively new field. Stout (cited in Crews, 1989), an allergy specialist, said there is no reliable test for food allergy other than elimination of the food and the subsequent testing without it.

Research has yet to produce adequate results showing the effects of food products on behavior. Only observational findings have yielded questionable results. There is a need for more information on how diet and environmental factors affect human behavior (Vass & Rasmussen, 1984).

Some kids do better with a nonadditive, no sugar, and reduced carbohydrate diet (Schaeffer, 1988). This is what parents and educators have heard in the past and have stuck to in the present. Their thoughts were supported strongly by Dr. Feingold's restricted diet. Many parents of children with behavior problems adopted the suggested diet, and some of them reported a noticeable improvement in their child's behavior (American Council on Science and Health, 1981), but these reports were based on informal observations alone.

Parents and educators liked using the restricted diets because it gave them a grasp on how to control their child's behavioral problems. Recent research, however, has shown their ideas to be unjustified. In 1982, the National Institute of Health (NIH) held a conference and concluded that special restricted diets should not be used to treat hyperactive kids until more research is done (Hadley, 1984).

Adhering to a certain kind of diet may postpone more appropriate medical, psychological, or educational interventions (Kavale & Forness, 1983). With the belief of a controlled diet cure-all, parents and educators failed to look at other possibilities as causes for behavioral disruptions. With recent research, adults should be opening their eyes to other culprits.

#### Recommendations

A certain type of diet should not be initiated until thorough and appropriate evaluation of the children and their families, and full consideration of all traditional therapeutic options have taken place (Hadley, 1984). Further research in each of these areas is needed to be able to conduct meaningful investigations of the potential benefits of dietary management of hyperactivity.

An area which needs to be looked at is whether a child has high or low blood sugar. Fishbein (cited in Roloff,

1983) says that when blood sugar is low, your brain cannot function properly. Low blood sugar contributes to irritability, headaches, agitation, frustration, and explosive behavior. She also stated that the more sugar one consumes, the lower one's blood sugar tends to be. Nutritional snacks (free from sugar) could thus help a child perform better, free from behavioral distractions, through the course of a normal school day.

A study was done by the Madera (California) United School District to see what effects the intervention of a mid-morning snack of nuts and raisins have upon the learning, attitudes, and classroom behavior of children in grades one through six. The study concluded that nutritious snacks were worthwhile, minor interventions that used no instructional time. The snack had a positive effect on the attitudes of primary age students (Furman & Noli, 1983).

Some findings have supported the idea that sugared foods and those containing additives, do play a part in the behavioral disruptions of elementary age children. More recent findings have disputed this claim. More research is needed on this topic, but it cannot be overlooked. Vast numbers of children have been put on drugs for hyperactivity or depression without being tested for nutritional or ecological causes (Vass & Rasmussen, 1984). Among the helping

professions, counseling rates as one of the lowest in using the holistic approach to understanding the individual (Vass, 1983). The challenge to counselors and other educators is to broaden their perspective and look at children as whole human beings without separating mind and body (Vass & Rasmussen, 1984).

### Conclusion

In trying to understand the behavior of elementary age children, educators and parents must look at the child holistically. Too much attention has been directed towards blaming sugar and other food products for the deterioration of a child's actions. Recent studies have given little support in suggesting that sugar and food additives cause hyperactivity among children.

As counselors we are obligated to look at the whole child to see where the help is needed. We may be forced to spend more time and energy in getting to know the whole child instead of following the simplistic belief that sugar and other food products are causing our children's behavioral problems.

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