

## **The Three Elements of Childhood Obesity**

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Fifty years ago obesity among children was nonexistent. However, today childhood obesity, in this nation, has reached epidemic proportions affecting 12.5 million children (Ogden & Carroll, 2010). This is a tragic and outrageous increase, therefore, the overall health of our kids along with the solution and prevention of childhood obesity must gain priority status. The children of today are America's future and obesity should not be a part of the future. The purpose of this research paper is to present scientific evidence and logical assertions that will revolutionize thinking, provide solutions, and provoke priority actions that will obliterate childhood obesity in this nation.

There is much controversy pertaining to the reasons why childhood obesity has become such a crisis and the implications are widespread. Preliminary research indicated that a sedentary life style, removal of mandatory physical education classes in schools, and lack of parental initiatives are most definitely factors, but it goes much deeper. Through the years and specifically within the last 50 years, in America, the majority of food industries have completely set aside the health factor; there are just some things children cannot consume on a regular basis and not expect adverse results. Therefore, this study has been limited to the research and presentation of the nutritional value of three elements that were not in the American food supply 50 years ago: hydrogenated oils, high fructose corn syrup (HFCS), and Monosodium glutamate (MSG). The research study revealed that these three key ingredients, hydrogenated oils, HFCS, and MSG are fueling the childhood obesity epidemic in our nation, and using research and data to support this claim, the study provided further credible evidence that childhood obesity is not only preventable, but would be annihilated if these three ingredients did not exist in our food supply.

The research was further developed accurately and balanced by the study of credible informative research based books, such as, *Poison in the Pantry* (DeMatteis, 2005), current online scholarly journals and articles, such as, *The Food Weekly News* and studies from *The American Journal of Clinical Nutrition*. Also, research analysis and articles from sources, such as, *The Cambridge Handbook of Psychology, Health and Medicine*, as well as scientific documentations and statistics from government sources within the U.S. Health and Human Services (HHS), Food and Drug Administration (FDA), and Center of Disease Control and Prevention (CDC) websites.

While the intent of the study was not to target any one institution or industry regarding the obesity epidemic, preliminary research provided credible evidence that this crisis has been set on a destructive course by our very own nation's qualified leaders—the U. S. Food and Drug Administration (FDA). Research revealed that the FDA failed to do its job, which is to ensure that food is safe and wholesome. *Food* in Webster's Dictionary is defined as any substance that contains nutrients needed for energy and tissue growth. However, the food sitting on the grocery store shelves no longer fits that basic definition. Research revealed that the overly processed beverages, boxed, and frozen foods of today are nothing more than a diet of synthetic and chemical additives, incapable of providing adequate nutrition, energy, and tissue growth.

In addition, the research weighed in to reveal that these three elements, hydrogenated oils, HFCS, and MSG may sound like food and are passed off as food ingredients or safe additives by the FDA and food industries, but they are not food and they are not safe additives; they are chemicals. The research study exposed the FDA as the main culprit in assisting and fueling the obesity epidemic by approving more and more chemicals in our food.

*Chemical*, defined by Webster's Dictionary, is produced by or used in a reaction involving changes in atoms or molecules. The study clearly showed that the three elements, hydrogenated oils, HFCS, and MSG are chemicals with changes in structure, composition, and properties. In this study, each of these elements/chemicals have been independently examined through secondary research and presented as to what they are derived from and the role they do play in contributing to childhood obesity. We will first look at hydrogenated oils/fats.

Hydrogenated oils are better known as trans fats. Laura DeMatteis (2005) states in her research based book, they "are the most dangerous of all fats and the only fat not listed on nutrition facts on labels because there is no safe levels to consume" (p. 16). Hydrogenated oils/fats are derived from a chemical process that completely changes the molecular structure of the vegetable oil. The hydrogenation process moves hydrogen gas through heated vegetable oils in vats that contain metals, such as copper, nickel, or zinc. The metal reacts to the hydrogen gas and becomes the catalyst that relocates the hydrogen molecules in the oil, making the natural oil into a man-made synthetic oil with different and stiffer molecular shapes (Synthetic foods, Microproteins, and Hydrogenated Fats, 2005). The oil has been seriously altered and changed as the molecules are now a synthetic chemical reaction, no longer a substance that can be categorized as a safe ingredient containing nutritional value. However, manufacturers prefer it because it extends the shelf life of their overly processed boxed and packaged foods (Clark, 2011). Furthermore, the FDA approved trans fats/hydrogenated oils in the late 1960's which is over 40 years ago (DeMatties, 2005).

Obviously, the FDA took a stand years ago and sided with the shelf life of inferior food industries, not the life of the American children. This is a serious infraction the FDA has placed on the health of Americans, especially the children as well as the parents. Some studies suggest that it is entirely up to the parents, even when these studies mention the possible influence from trans fats and calories, yet, it is the parents that are held responsible for behavioral and intervention practices needed to keep their children active and eating healthy (Davis, Gance-Cleveland, Hassink, Johnson, Paradis, & Resnicow, 2007; For Consumers, 2010; Obesity, 2007). Not one of the reports targeting parents at fault took the avenue of looking at the effects of chemical ingredients that are causing this great outburst of obese children in our country. The only thing parents can do, at this point, is to investigate every label, learn the language the food industries now use to hide certain chemical ingredients, and simply stop buying the foods contaminated with fat producing chemicals. However, the biggest problem here still lies with the FDA who has allowed food industries to pervert and manipulate labels to read whatever sounds good. According to an article in the Obesity and Diabetes Week, Rodale Inc. (2009), "now more than ever, Americans need help deciphering misleading food labels and dubious health claims, as the food we consume today is considerably different from the food that we ate 20 or 30 years ago" (p. 90, para. 2). This is a hide-and-seek game and the joke is on the

American people, only it is not funny as the following research reveals the hazardous effects hydrogenated oils/trans fats plays in the childhood obesity epidemic.

A very important aspect to consider is the research that revealed how Denmark experienced a drop in heart disease by 50 % just by reducing trans fat/hydrogenated oil consumption from 6 grams per day to 1 gram per day (Sawyer, 2010). Even more importantly, the studies of two groups of monkeys, by Kavanagh et al, during a six year period, fed one group of monkeys a diet consisting of 8% of their calories from trans fat/hydrogenated oils (hydrogen bond) and the other group fat calories as cis-monounsaturated fat (no hydrogen bond). The trans fat dieting monkeys gained 7.2% body weight, while the other group of monkeys only gained 1.8% body weight. The results suggested that industrially produced trans fatty acids (hydrogenated oil/fats) promote obesity and harmful abdominal fat. These findings contribute to explaining how the high intake of hydrogenated oils/fats may even increase the risk of type 2 diabetes (Astrup, Dyerberg, Selleck, & Stender, 2008). The scientific studies and research revealed that hydrogenated oils/fats grossly increases abdominal body fat of monkeys, and these same oils/fats have flooded the American food supply which has caused an unnatural chemical induced increase of body fat in humans and the results—childhood obesity. Next we will examine high fructose corn syrup (HFCS).

High fructose corn syrup (HFCS) was developed in Japan in 1971 which was over 40 years ago. Research reveals that this is not a natural sugar as in table sugar (sucrose). Chemists, in the lab, processed cornstarch and produced glucose and fructose molecules that are not bonded together; meaning a molecular change occurred and the fructose and the glucose are not bound together (as in table sugar). So your body does not need to break it down, therefore the fructose is absorbed immediately by the liver and the liver metabolizes the fructose into fat and cholesterol more rapidly than any other sugar (Appleton, 2002). High fructose corn syrup is not a natural substance, it has no enzymes, vitamins, or minerals (DeMatteis, 2005). HFCS is not even a sugar, it is a chemical sweetener. Now, that this information has gained some recognition in the health conscious world, the Corn Refiners Association has set out to change the name of HFCS to corn sugar (Obesity, 2011). A good name takes decades to establish. If HFCS was in fact, a good name, established on solid integrity and wholesomeness, why would anyone petition our nation's FDA to hide that name? In the Corn Refiners Association's defense, they explain that it is so consumers will know how much sugar they are consuming (Corn Refiners Association, 2011). However, HFCS by any other name is still a chemical sweetener, not sugar.

According to a report that defends HFCS, from the *Institute for Agriculture and Trade Policy*, they agree that there has been an increase in consumption of added sugars and of course this adds to the obesity problem, however, they conclude that they cannot find where the replacement of sucrose (table sugar) with HFCS may provide any significant difference in the obesity issue (Muller, Schoonover, & Wallinga, 2007). In addition, the overall analysis by *Nutritional Research and Practice* journal showed that total calorie intake and consumption of high fructose corn syrup (HFCS) did not correlate with rising obesity trends (Chin & Shao, 2011). A large oversight in this study is that they did not take into account that just because the sales and use of HFCS has declined, it has been replaced by a more dangerous chemical sweetener, Aspartame. So while the use of HFCS has declined in a small degree, and obesity is still rising, the introduction of Aspartame is taking the place of many HFCS sweetened products.

Aspartame is also a chemical and an excitotoxin. Excitotoxins are addictive and cause brain cell death, diabetes, obesity, and attention deficit hyperactivity disorder (ADHD) (DeMatteis, 2005). Yet, HFCS is still prevalent in numerous products kids consume and research concludes that the damage it causes is extensive.

Studies reveal that HFCS remains a dangerous chemical sweetener, according to research in the journal, *Integrative Physiology*, (as cited by Ponder, 2009) in the article *Target Corn Syrup in Fight of Obesity*, the researchers identified that excessive fructose (HFCS) causes a liver disease called, nonalcoholic fatty liver disease, which affects between 15% to 25% of all Americans and "it's the most common finding in obese children and adults" (para. 6). Why is there an excessive amount of fructose in anyone's diet? Research reveals that HFCS is in everything on our grocery store shelves, from soda pop to breads, pasta sauce, bacon, and beer (DeMatteis, 2005).

Furthermore, according to a scholarly web article in *News at Princeton*, by Hilary Parker (2010), regarding a study at Princeton University which was conducted by students and psychology professor, Bart Hoebel, who specializes in the neuroscience of appetite, weight, and sugar addiction, explains how some believe that high fructose corn syrup (HFCS) is no different than other sweeteners especially when it comes to obesity, however, and most alarming, their results showed that "when rats are drinking high-fructose corn syrup at levels well below those in soda pop, they're becoming obese—every single one, across the board. Even when rats are fed a high-fat diet, you don't see this; they don't all gain extra weight" (para. 3). Scientific evidence points to high fructose corn syrup as a major contributor to the childhood obesity epidemic and is clearly a synthetic chemical sweetener. Finally, we will explore Monosodium glutamate (MSG).

Monosodium glutamate (MSG) is a glutamate that has been chemically altered to supposedly increase the taste of bland, cheap foods. MSG was once thought of as just a seasoning in only Chinese food, but now it is being used in nearly every restaurant around the world as well as our food supply. In addition, Laura DeMatteis (2005) explains that it is important to distinguish that "MSG is not the natural form of glutamate that the body needs for functioning" (pg. 6).

A study in China defends MSG as it evaluated a number of households and the average daily intake of Monosodium glutamate (MSG) and concluded that it did not cause obesity, except in the case where a lack of protein and activity existed (Zumin, Luscombe-Marsh, Wittert, Yuan, Dai, Pan, & Taylor, 2010). However, Monosodium glutamate (MSG) has been scientifically proven to cause obesity as it has been used for years in research labs to create obesity in rats (rats do not develop obesity on their own). MSG has been making rats obese for years so researchers can work with obese animals to develop treatments for diabetes (DeMatteis, 2005). Holistic nutritionist and author, DeMatteis (2005) states in her book that, "additional studies on the unborn fetus of rats whose mothers were fed water laced with MSG were born with juvenile obesity, reduced energy and learning disabilities" (p.8).

MSG is also known as hydrolyzed yeast protein (which consists of glutamate, aspartame, cystoic acid—all excitotoxins that over stimulate the receptors in the organs, killing cells) and a myriad of other alias, and is added to a large percentage of the processed foods in our

grocery stores (DeMatteis, 2005). The evidence is cut and dry, MSG is a chemical ingredient in the foods our kids eat and greatly contributes to our children's health issues and most assuredly causes chemically induced childhood obesity.

Some reports and food industry articles have argued that the parents are responsible for monitoring what their children eat and blame childhood obesity solely on them. If the parents do not know the dangers of the chemical ingredients that produces unusually high levels of belly fat, how can they accurately monitor what their kids are consuming? However, the FDA does know, they are setup to know. The FDA is employed by the people of the United States of America and if the FDA was actually doing its job and working for the benefit of the American people and their children, any and all ingredients/chemicals that are dangerous or potentially harmful would not even be considered. It does not take a rocket scientist to see that there is a huge problem with chemical ingredients in our food, specifically three chemical ingredients, hydrogenated oils, HFCS, and MSG.

In conclusion, while a few studies and articles defended the safety of the three elements, further in depth hard-science research unveiled solid evidence that cannot be ignored. The results of chemical laced foods in the American diet cannot remain hidden in the dark shadows of the quick and easy meal advertisements and misleading nutritional labeling. Research showed that the FDA left the door wide open allowing food industries the liberty of adding whatever chemicals fit their fancy or profit margin. The American food industry has perpetuated cheap chemical additives causing far too many adverse effects on our kids. The proof is in the pudding as the increase of childhood obesity is now an epidemic.

The research study was limited to the research and presentation of the nutritional value of three elements that were not in the American food supply 50 years ago: hydrogenated oils, high fructose corn syrup (HFCS), and Monosodium glutamate (MSG). The research found no nutritional value in these three elements and further proved that all three are dangerous chemicals. The research study also revealed that these three key chemical ingredients are grossly fueling the childhood obesity epidemic in our nation. The research and data supported this claim, as the study provided balance and credible evidence that childhood obesity is not only preventable, but would be annihilated if these three elements, hydrogenated oils, HFCS, and MSG did not exist in our food supply.

Obesity was nonexistent in children 50 years ago. These three chemical ingredients did not exist in food 50 years ago. If we are to reduce and annihilate childhood obesity, we must recognize the basic chemical causes to eliminate the obvious effect. The hypothesis governing this research study proved to be true and it is hoped that this nation's officials and institutions will enforce the changes necessary to save the kids of this generation and future generations from certain tragedy—childhood obesity.

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