Artificial Sweeteners and Weight Gain

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Abstract:

The purpose of this study was to educate the public about high intensity sweeteners. High intensity sweeteners are compounds that are many times sweeter than sucrose. There are six approved high intensity sweeteners in the United States. The high intensity sweeteners are - aspartame, acesulfame potassium, neotame, saccharin, stevia, and sucralose. These sugars duplicate the taste of sugar while offering the benefit of a lower caloric content.

Introduction:

The rate of obesity has risen since the 1980s and there is evidence that it will continue to rise. In the United States only four states had an obesity rate of of less that 20% and twenty two states had an obesity rate of 25% or more. Obesity is a serious issue because it poses many health risks that are directly correlated with excess body weight [1]. Amerian's every year spend an obsence 1-2 billion dollars on diet products [2].

The Food and Beverage Industry is increasingly replacing natural sugar with artifical ones. Artifical sweeteners allow companies to make a more profitable drink because they cost a fraction of the price of natural sugar. Artifical sweetners continue to become more and more inexpensive as patents expire. For example, the Tate and Lyle's patent is soon to expire allowing the price of sucralose to decrease by 30% [3].

Many people use sugar substitutes for weight loss, dental care, and to regulate blood sugar levels.

Method:

I read newspaper articles, peer-reviewed journals, government documents, online articles, diet sites, and books to gain a better understanding of artificial sweeteners. My cited sources are from websites that are reliable that I have evaluated myself using Roc Ordman's website evaluation criteria.

Figure 1:: Over consumption of Food [6]

Figure 2: The increase of artificial sweeteners [7]

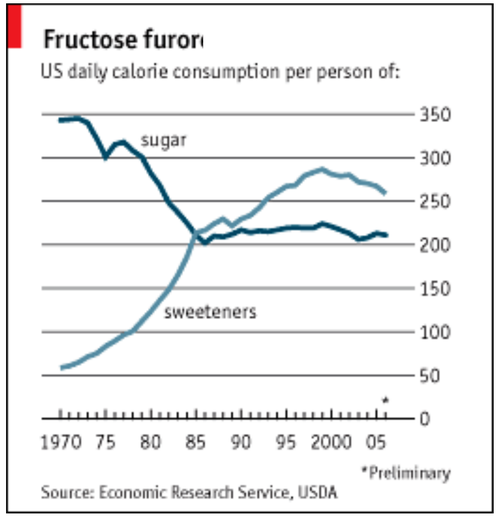

Figure 3: High Intensity Sweeteners compared to Sucrose [8]

Aspartame	160-200x	Nutra Sweet	FDA approved 1981
Acesulfame potassium	200x	Nutrinova	FDA approved 1988
Neotame	8,000x	Nutra Sweet	FDA approved 2002
Saccharin	300x	E954	FDA approved 1958
Stevia	250-300x	Rebiana	FDA approved 2008
Sucralose	600x	Splenda	FDA approved 1998

Results:

In a study conducted by the University of Texas Health Science Center at San Antonio showed and increase in weight gain and obesity in those who drank diet soda [4].

In studies conducted with animals, weight was gained due to an insulin spike. This insulin spike makes blood sugar store itself in tissues. Artifical sweeteners do not increase blood sugar levels and this results in an increased food intake. For example. rats were feed artfical sweeteners showed to consume a high caloric count diet, increased body weight, and increased adiposity [5].

Results (continued):

According to Travis Saunders, an obesity reasearcher from Obesity Panacea, beleives that the consumption of sugars is partly responsible for obesity in the United States. Cutting sugar completely out of one diet is not necessary, but simply limiting it to one soda or one candy bar a day is the absolute most you should have in a day. Excessive sugar consumption is dangerous according to the American Heart Association.

Since sugar causes weight gain, people believe switching to "light" or "diet" beverages will decrease their chances of weight gain. "Light" or "diet" sodas are artificially sweetened and have the benefit of tasting sweet and having virtually no calories. In another study conducted on rats, who were fed artifically sweetened sugar resulted in gaining a significant amount compared to thoser ats who ate sugar that contained sugar.

More studies on rats have been done. Rats were fed saccarin while other were fed sugar. Rats were given a pre-meal snack of the nutrition shake Ensure. Those rats that were being feed saccharin consumed more than those who were fed regular sugar.

Conclusion:

According to the studies analyzed, foods and drinks that are sweetened artifically correlate with the increase of food consumption. More research needs to be done on this topic because animal studies are different than human studies. Even though animals are sometimes a good example, they do not have the same physiology as a human.

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