The “Diet” Delusion

Products promoting “diet” are attracting consumers more than ever. Due to the increase of people with metabolic syndrome and a growing national interest for health, zero-calorie sodas are now occupying more than one-fourths of the soda market in Japan (“new flavor released in stores,” par. 2). However, “zero calories” itself does not mean “overweight cure” or “fat remover”. Does consuming these calorie-free products really lead a way away from obesity and disease? Although products with the slogan “zero calories” or “diet” may sound like a healthy choice to make, the effects of consuming them are not always desirable.

Artificial sweeteners, the big cheese in making a product “calorie-free”, are chemically produced molecules that mimic the taste of sugar, but have no carbohydrates or calories. Also referred to as nonnutritive sweeteners, the major difference between them and the other sugar substitutes lies in the point that artificial sweeteners are not carbohydrates and therefore, do not increase blood glucose levels (“Artificial Sweeteners. D,” par. 1). There are five types qualified for use in the United States: Saccarin, Aspartame, Sucralose, Acesulfame potassium (Acesulfame K), and Neotame. Since they are so intensely sweet, being 160 to 13,000 times sweeter than sugar, only small amounts are required to imitate the sweetness of sugar (“Are Sweeteners Safe,” sec. 1). Thus, they’re esteemed everywhere, from sodas and chewing gum to baked foods and cooking condiments.

Pros do exist in consuming these non-caloric sugar substitutes. For one, they provide happy news for diabetics, enabling them to enjoy sweets without raising their blood glucose levels as much ("Cutting Calories Carbs", sec. 1). Also, they can help reduce a person's calorie intake while he's on a weight management program and is limiting his calories. In addition, they don't contribute to tooth decay like sugar ("Artificial: Understanding these," secs. 1-5). Their safety is indeed guaranteed by the Food and Drug Administration (FDA), through hundreds of studies in total. There should be no reason to refuse using them.

Nevertheless, there are cons for each artificial sweetener that cannot be simply ignored. Artificial sweeteners were produced in labs just throughout the last two centuries, and only scientific theory and animal tests have proven their safe use. They do not exist in nature, and have not been in contact with humans long enough to prove their actual safety on people. Whereas sugar has proven its safety by being a crucial energy source for all animals ever since life was born, it's not illogical to say that the benefits of these substitutes still remain ambiguous (Sugimoto 5).

There are times when people just cannot resist their desire for sugar, and find themselves reaching for sweets before knowing it. This is completely natural as a human being. Instinctively, humans have distinguished what food was necessary and what was harmful from the primary tastes, and "sweet" foods usually meant they contained calories. "Sweetness" has been the clue for animals to reach carbohydrates, the essential nutrient for all

animals to live (Sugimoto 3). However, when artificial sweeteners, non-carbohydrates, come into the body instead of glucose, the body is deceived. The body's demand for carbohydrates is ignored and is instead fed with forgeries that do not provide the body energy at all.

Of course, the consequences of this deception aren't light. These synthetic molecules trigger the same taste receptors as glucose, but they behave quite differently once they're inside the body (Horn 5).

Sugar has no law specifying its daily intake allowance, and the FDA has even decided not to set a Daily Value on sugar (Hill, pars. 1, 3). If artificial sweeteners were completely safe for humans, there would be no stipulations limiting their use, either. However, each of these artificial sweeteners is regulated by the FDA as a food additive, and an acceptable daily intake (ADI) is established for each one ("Artificial Sweeteners. M," sec. 5). The ADI is "the intake level in humans that may be safely consumed for a lifetime by virtually any member of the population without health or safety concerns (Rulis and Levitt 3)." To put it the other way around, that means that overuse of these additives may result in "health or safety concerns". Unless artificial sweeteners are used properly, this food, this manmade technology, is toxic and dangerous. Based on a survey, however, only five percent answered that they were aware of the ADI for artificial sweeteners ("Artificial Labeling," sec. 2). Not many people regard or even know about the ADI in reality and are continuously consuming them without thinking about the health effects it may cause.

Most artificial sweeteners were made from chemical accidents, not from an effort to invent sugar substitutes. For example, saccharin, the oldest approved sweetener, was discovered in 1879 while researchers were working on coal tar derivatives (Yang 101). Although it claims to be the "best researched sweetener", how could a substance including tar be safe? The FDA once intended to ban saccharin's use due to fear for its carcinogenicity. The final ban decision failed to pass, but instead, every product with saccharin had a warning label until 2000: "Use of this product may be hazardous to your health. This product contains saccharin which has been determined to cause cancer in laboratory animals ("Artificial Sweeteners. M," sec. 6)." Since studies concluded that the bladder tumor findings in male rats did not translate to humans, this label is no longer existent. However, unlike sugar, saccharin has only been used for a little more than a century. Like how the swine flu epidemic was caused in 2009, the carcinogenic factor in saccharin may change its form suddenly and affect humans as well.

Experts assert that there is sufficient data from studies, both short-term and long-term, in proving the safety of artificial sweeteners. On neotame's website, it notes about the long-term and lifetime animal studies that experts conducted as preclinical studies. Yet, "long-term" is probably less than a human lifetime, considering that neotame was only approved ten years ago ("neotame," 4). Most sweeteners pass through the body unchanged, but there is still a possibility of synthetic substances accumulating inside the body over the

years. There are some things that people cannot predict when the product makes its debut; no one predicted tobacco's toxicity, but it was a carcinogen. Artificial sweeteners could turn out to be the twenty-first century drug.

Regardless of its possible toxicity, people keep choosing "zero-calorie" products and consuming artificial sweeteners because they are often attracted by the "calorie-free = fastest way to get slim" delusion. This equation, unfortunately, is false. One way this mistake can be explained is by the brain phenomenon, compensation. "Sweetness" sparks the dopamine signal, just like drugs such as cocaine. The brain's pleasure centers are triggered, but at the same time, the lack of calories in artificial sweeteners provides no real satisfaction. The person then reaches for more food, thinking it's absolutely fine to eat an additional amount (Mercola, sec. 5). They overcompensate the amount of calories they consume, and they end up eating much more than they need to. This, of course, leads to weight gain.

Not only are there scientific theories proving the unfavorable effects of artificial sweeteners, but actual studies have also made it clear that consuming these sweeteners leads to health disorders.

The most devastating fact for people anticipating weight loss by consuming "zero-calorie" products, may be that consuming artificial sweeteners actually caused waist size increases in people and weight gain in rats. The University of Texas reported that over a ten-year span, diet soft drink users experienced 70 percent greater increases in waist

circumferences while drinkers drinking two or more cans a day experienced 500 percent greater increases, compared with the non-users (Sansom, sec.3). At Purdue University, rats fed with saccharin-sweetened yogurt gained more weight over two weeks than the rats fed with glucose-sweetened yogurt (Jameson, par. 19). Researchers analyzed that this was due to the rat becoming more efficient at absorbing sugar from its food, because of its necessity to generate itself out of a limited amount of calories.

The actual reports of consequences of consuming artificial sweeteners are not limited to these two. Other reported cases include inflammatory bowel disease, raised blood glucose levels, stroke risk, brain tumors, and mental retardation (Corsi, par. 1) (Melnick, par. 1) ("Health Dangers," sec. 3). These are all surely not the desired effects of consuming "zero-calorie" products.

What's more, The American Diabetes Association and the American Heart Association released a joint statement giving cautious approval of nonnutritive sweeteners (NNS) (Wulffson, par. 2). They had been recommending the use of these sweeteners, but they have now changed their stance, stating that "NNS *may* be used in a structured diet to replace sources of added sugars and that this substitution *may* result in modest energy intake reductions and weight loss (Gardner 517)." They did not mention any safety issues, but did point out the high possibility of energy intake compensation. Even these national organizations have acknowledged the fact that artificial sweeteners aren't direct cures for

disease and obesity.

Consuming “zero-calorie” products containing artificial sweeteners may sound healthy, but actually, unhappy consequences await people due to deception on their own body and mind. Stipulations limiting their use and studies proving health disorders only indicate that consuming artificial sweeteners is quite far from healthy, but possibly harmful indeed. Instead, by contributing to overcompensation and weight gain, they may be leading a way to obesity and disease. Artificial sweeteners aren’t magic powder for weight loss. If someone is ordering a hamburger with a large size diet coke thinking that he could get slim, he is not quite correct.

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