Do Diet Sodas Really Cause Cancer?

Presentation

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Abstract

Certainly, there have been scientific arguments regarding the possibility of diet sodas in causing cancer. For that reason, researchers, educators, government and non-government agencies have pulled effort in the attempt to ascertain whether diet sodas really cause cancer or not. Just like every researcher is determined to uncover the truth behind this matter, this presentation is also committed to revealing the association between the consumption of diet sodas and various types of cancers by providing evidence from a peer-reviewed scientific journal article.

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Fundamentally, this presentation utilizes evidence contained in a peer-reviewed journal article titled *Consumption of Artificial Sweetener and Sugar-containing Soda and Risk of Lymphoma and Leukemia in Men and Women*, which was published in 2012. The authors of this journal article include Eva S Schernhammer, Walter C Willett, Brenda M Birmann, Kimberly A Bertrand, Laura Sampson, and Diane Feskanich. The source of the journal article is the US National Library of Medicine and National Institute of Health.

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The objective of the journal article is to assess whether prolonged and excessive consumption of diet sodas and sugary sodas is connected to the risks of acquiring hematopoietic cancer. According to Schernhammer et al. (2012), most diet sodas contain aspartame, which is an artificial sugary additive. Indeed, the journal article also puts more emphasis on evaluating whether prolonged consumption of aspartame contained in diet soda is associated with cancers.

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In particular, the journal article presents the results of two different studies including the assessment of diet sodas in the Health Professionals Follow-up Study (HPFS) and another assessment of the same in the Nurses’ Health Study (NHS). NHS commenced in 1976 and involved about 121,701 female nurses who fell in the age bracket of 30-55 years while HPFS began in 1986 and involved 51,529 male health professionals within the age bracket of 40-75 years. The research required both cohorts to provide information regarding the medical history and risk factors associated with cancer by filling out questionnaires. Subsequently, the assessment of diet sodas intake was conducted on NHS women in 1984 questionnaire and repeated again in 1986 in both cohorts.

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Over twenty-two years, the researchers identified 285 multiple myelomas, 1324 non-Hodgkin lymphomas (NHLs) and 339 leukemia cases. However, the researchers found no significant connection between diet sodas intake and risks of multiple myelomas and NHLs when the two cohorts were combined. Furthermore, the study revealed that men who consumed quantities of diet sodas greater than one serving per day had elevated risks of acquiring multiple myelomas and NHLs as opposed to men who hardly consumed diet sodas. The researchers did not observe increased risks of NHLs and multiple myelomas in women who consumed diet sodas.

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According to Schernhammer et al. (2012), men exhibited increased risks of multiple myeloma and NHLs as opposed to women because men bear an enormous enzymatic activity of alcohol dehydrogenase type 1 (ADH), which accelerates the rate of conversion of aspartame from a compound known as methanol to carcinogenic substrate formaldehyde. For that reason, the risks of leukemia and multiple myeloma were also greater in men who consumed little alcohol as compared to men with high alcohol intake. Schernhammer et al. (2012) argue that men with low alcohol intake have a higher ADH activity, as opposed to men with high alcohol intake.

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The journal article has clearly explained the biology behind the increased risks of multiple myeloma and NHLs in men as opposed to women. Schernhammer et al. (2012) state that it is biologically plausible to argue that aspartame is carcinogenic because it is a dipeptide of phenylalanine and a methyl ester of aspartic acid. Additionally, Schernhammer et al. (2012) has made justifiable interpretation of the data. However, the journal article concludes by stating that the findings are only suggestive but not conclusive. Hence, there is a need to conduct other several studies to confirm that diet sodas are carcinogenic.

Research Question

The research question asks whether diet sodas have the potential to cause cancer. Do diet sodas really cause cancer? The question has been in the highlights of major televisions, blog posts and social media platforms as different people attempt to break the puzzle. Furthermore, scientists including medical professionals, educators and students have also been interested in uncovering whether diet sodas are carcinogenic or not.

Statement from the peer-reviewed article that supports the claim

Schernhammer et al. (2012) state that prolonged consumption of diet sodas bears suggestive signs of causing multiple myeloma and non-Hodgkin Lymphomas (NHLs) in men, but not in men.

Evidence Supporting the Claim

According to the observations from the peer-reviewed journal article, men that consume more than one daily portion of diet soda have an amplified risk of acquiring various cancers including multiple myelomas and non-Hodgkin Lymphomas (NHLs), as opposed to women that consume the same quantities. The results of the study encompassed in the journal article revealed that 1324 people had non-Hodgkin Lymphoma (NHL) while 285 people suffered from multiple myelomas.

Evidence Supporting the Claim

Another observation of the results revealed by the journal article shows that aspartame, which is a major additive in diet sodas can be carcinogenic if handled improperly. Schernhammer et al. (2012) argues that aspartame has the potential to break down to compounds such as aspartic acid, phenylalanine and methanol if kept above room temperature. Regretfully, these compounds are carcinogenic. Therefore, consumers have a challenge in ensuring that the diet sodas are stored under room temperature. Otherwise, they would be prone to risks of NHLs and multiple myelomas if they consume diet sodas that contain these hazardous compounds.

Significance and Relevance of the Evidence

The evidence plays a significant role in informing the consumers of diet sodas about the detrimental effects of excessive diet soda intake on their health. Additionally, the evidence eliminates the confusion among people who do not understand whether diet sodas really cause cancer or not. The evidence is relevant because it has been obtained from a peer-reviewed journal that covered two studies that involved medical professionals. These studies include HPFS and NHS.

Statement Refuted In the Journal Article

Schernhammer et al. (2012) state that the consumption of diet sodas cannot be associated with cancer because there was inconsistence sex effects in the studies. Additionally, Schernhammer et al. (2012) refute the claim that diet sodas cause cancer because the human data utilized in the studies was scarce, making the studies limited by their exposure assessments.

Explanation of why the refuted claim is inaccurate

The reason as to why the refuted claim is inaccurate is because the studies exhibited inconsistence sex effects. In other words, the studies revealed that only men have an increased risk of cancer (NHLs and multiple myelomas) as a result of diet soda intake. Not a single woman was diagnosed with NHLs and multiple myelomas that are attributed to diet soda intake.

Works Cited

Aune, Dagfinn. "Soft Drinks, Aspartame, and the Risk of Cancer and Cardiovascular Disease." *The American Journal of Clinical Nutrition*, vol. 96, no. 6, July 2012, pp. 1249–1251., doi:10.3945/ajcn.112.051417.

Schernhammer, Eva S et al. "Consumption of artificial sweetener- and sugar-containing soda and risk of lymphoma and leukemia in men and women" *American journal of clinical nutrition* vol. 96,6 (2012): 1419-28.