Need for Open Science: Study on Effects of Sucrose Hidden for 50 years

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Avoiding sugar in the diet is presently a standard practice. In fact, its lifelong intake has been restricted due to its role in causing several diseases. However, there are some effects of sucrose withheld by the scientists, which have come out into open after about 50 years. Recent studies published in JAMA internal medicine, surprisingly show the role of sugar or sucrose in causing heart disease, that was downplayed in the 1960s.

Early warning signals of sugar-based coronary heart disease (CHD) risk emerged in 1950s research, subsequently repressed by the International Sugar Research Foundation (ISRF). Instead, an ISRF sponsored research project in 1965 misleadingly delineated fat and cholesterol as the dietary cause of CHD. The misrepresentative literature review published in the highly influential New England Journal of Medicine conversely softened the role of sucrose. The historical publication and aftermath highlight the need for restrictions on industry-funded research on food items, due to conflicting interests associated.

Effects of Sucrose Withheld: Supporting Facts & Controversy

Researchers from the University of California, San Francisco recently assessed the SRF-funded animal research on sucrose's role in cardiovascular health. This study initially backed another study by the University of Birmingham researchers, observing the effects of sucrose in rodents. However, when the outcome of two-separate studies demonstrated sucrose consumption linked heart disease and bladder cancer, the results went unpublished.

ISRF withheld the findings of a research, whose results were withheld for about 50 years. From the research, it was known that rats which fed on a high-sugar diet, had higher levels of a type of fat known as triglycerides in the blood. The outcome of the historic study could have cast a doubt on the correlation between elevated triglycerides and heart disease. The results remained unpublished. Furthermore, the SRF stopped funding the project named Project 259, that studied the impact of sucrose on the rat intestinal tract. Additional outcomes of Project 259 suggested the role of gut bacteria in mediating sugar's adverse cardiovascular effect. Another research, in 1969, further linked the influence of sucrose in increasing bladder cancer risk. Results found a possible link between increased sugar consumption and bladder cancer risk. But due to the policies of self-preservation, this led to study termination instead of publication.

Analyzing the Aftermath

On the perspective published in PLOS Biology, researchers believe outcomes of the animal study had translational effects on human health. Responsible disclosure of the accurate results earlier would have clarified two key points of the research on:

1. The risk of CHD is greater for sucrose than starch
2. Sucrose is a potential carcinogen associated with elevated levels of beta-glucuronidase (an enzyme connected with bladder cancer in humans).

At present, therefore, the research focus continues to scrutinize the following findings:

1. Differential effects of sucrose and starch digestion by gut microbiota and the resulting blood lipid levels
2. The quality of carbohydrates and its role on beta-glucuronidase-based cancer activity.

Reaching a Consensus

The recently published studies on JAMA and PLOS, contribute to an ongoing body of literature documenting industrial manipulation of science. Since ages, industries sought to provide research funding and hence, regulate commercially-favorable outcomes.Industrial mediation of research clearly creates conflict, since it has no scientific basis other than brand advocacy.

Research is rife with such examples, including the tobacco industry influence, pharmaceuticals and the more recent interpretations of climate change. History has repeatedly demonstrated how such collaborations have suppressed emerging scientific evidence. This evidence, if known, at the correct time, could have prevented the detriment of human health and welfare. As a result, at present, industry sponsorship on nutrition research continues to receive increased scrutiny. To begin with, clearly disclosing conflicts of interest in such research collaborations to maintain transparency, or avoiding collaborations altogether is recommended.

Current debates on the health impacts of sugar have in this way culminated over decades of scientific evidence tampering. The ongoing sucrose conflict underlies a variety of widespread disease than those outlined, creating different conflicts and methods of intervention. Governments have taken the initiative to impose a two-tier tax levy on sugary beverages to attenuate sucrose impact on childhood obesity. A professor of public health and policy at the Liverpool University recommends 10 portions of fruit and vegetables daily. Added refined sugar in tinned fruit is a problem, as is hidden sugar in processed foods, that we often consume without realization. Policymaking committees can reform guidelines to promote mechanistic/animal studies before food industry-industry funded studies that investigate sugar's role in disease.

Ethics of Industry-Funded Research & Open Access

Recent findings of the sucrose research highlight several ethical conflicts, including failure to disclose conflicts of interest and scientific manipulation. But nobody had the clue that sucrose could play any role in CHD or CVD. The investigations on dietary factors began when American men displayed disproportionately high rates of CHD mortality. The preliminary outcomes focused on reducing total fat, dietary cholesterol and saturated fat, contrary to findings on sucrose now known. The International Sugar Research Foundation (ISRF) or the Sugar Association (as it is presently known) denied any correlation between the intake of added sugars and CVD.

In response to recent allegations, the ISRF issued a press release dismissing the controversial study as an old, non-systematic perspective. They undermined past events as an assumption, simultaneously highlighting that known critics of the industry conducted the past research. They further denied allegations of termination of the study, stating that none of them ended due to the potential findings denoted. This historical account demonstrates the importance of disclosing industrial efforts, financial support or conflicts of interest to minimize research discrepancies. In science, reviews shape policy debates, federal funding priorities and subsequent investigations. This news also suggests that the research results and reviews must be made open so that the whole world can understand the results and the effects they have on their lives.

What is your view on effects of industrial mediation affecting the research findings? Do you know about any other incident when the research findings have been modified due to industry mediation? Please share your thoughts with us in the comments section below.

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