

Artificial sweeteners hit sour note with sketchy science

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Credit: University of Sydney

University of Sydney researchers have confirmed widespread bias in industry-funded research into artificial sweeteners, which is potentially misleading millions by overstating their health benefits.

In the same week that the sugar industry came under fire for influencing the integrity of scientific research, this new comprehensive review of [artificial sweetener](#) studies reveals that reviews funded by artificial sweetener companies were nearly 17 times more likely to have favourable results.

The review, published in the latest edition of *PLOS ONE* journal, analysed 31 studies into artificial sweeteners between 1978 and 2014. The reviews considered both the potentially beneficial effects of artificial sweeteners, such as weight loss, as well as harmful effects like diabetes.

"It's alarming to see how much power the artificial sweetener industry has over the results of its funded research, with not only the data but also the conclusions of these studies emphasising artificial sweeteners' positive effects while neglecting mention of any drawbacks," said co-author Professor Lisa Bero, head of the Charles Perkins Centre's bias node.

"The results of these studies are even more important than the conclusion, as the actual results are used in the development of dietary guidelines."

Study confirms sponsor influence on results

Alarming, this analysis of artificial sweetener studies also found financial conflicts of interest created bias at all levels of the research and publication process. Almost half (42 percent) of the reviews of artificial sweetener studies had authors that did not disclose their conflicts of interest, with about one-third of studies failing to reveal their funding sources altogether.

Studies by authors with a conflict of interest were about seven times

more likely to have favourable conclusions. None of the nine studies that had authors without a conflict of interest reported positive results.

"Transparency around an author's conflicts of interest and research funding sources for this area of nutrition science is sadly lagging behind other fields," said Professor Bero.

"Our analysis shows that the claims made by artificial sweetener companies should be taken with a degree of skepticism, as many existing studies into artificial sweeteners seem to respond to sponsor demands to exaggerate positive results, even when they are conducted with standard methods.

"Ultimately it is consumers who lose out from this practice because our findings show that the results of reviews on the health benefits of artificial sweeteners cannot always be trusted. Measures to eliminate sponsor influence on nutrition research are desperately needed."

Results raise further questions over funding source

Four of the studies assessed in this latest review were funded by 'competitor companies' that marketed sugary drinks or water, with all four of these reviews reaching conclusions which did not promote the health benefits of artificial sweeteners.

"It's important to be critical of reviews that are funded by any food- or beverage-related companies, not just the [sugar industry](#)," said Professor Bero, who is also based in the Faculty of Pharmacy.

The *PLOS ONE* study is the first major review of the effects of funding bias in nutrition research from the Charles Perkins Centre's Bias in Research project node, a unique research collaboration aimed at improving health policy by encouraging unbiased and evidence-based

research.

The study was conducted in collaboration with researchers from the Ramazzini Institute, the Johns Hopkins Bloomberg School of Public Health and the University of California San Francisco.

More information: Daniele Mandrioli et al. Relationship between Research Outcomes and Risk of Bias, Study Sponsorship, and Author Financial Conflicts of Interest in Reviews of the Effects of Artificially Sweetened Beverages on Weight Outcomes: A Systematic Review of Reviews, *PLOS ONE* (2016). [DOI: 10.1371/journal.pone.0162198](https://doi.org/10.1371/journal.pone.0162198)

Provided by University of Sydney

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