

# How candy makers shape nutrition science

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This Wednesday, June 1, 2016, photo shows Skittles, in New York. The Associated Press takes a look at how candy, cookie and soda makers are shaping nutrition science. Critics say industry-funded research is marketing masquerading as science, but the findings nevertheless become a part of the scientific literature. (AP Photo/Mark Lennihan)

It was a startling scientific finding: Children who eat candy tend to weigh less than those who don't.

Less startling was how it came about. The paper, it turns out, was funded

by a trade association representing the makers of Butterfingers, Hershey and Skittles. And its findings were touted by the group even though one of its authors didn't seem to think much of it.

"We're hoping they can do something with it—it's thin and clearly padded," a professor of nutrition at Louisiana State University wrote to her co-author in early 2011, with an abstract for the paper attached.

The paper nevertheless served the interests of the candy industry—and that's not unusual. The comment was found in thousands of pages of emails obtained by The Associated Press through records requests with public universities as part of an investigation into how [food companies](#) influence thinking about healthy eating.

One of the industry's most powerful tactics is the funding of nutrition research. It carries the weight of academic authority, becomes a part of scientific literature and generates headlines.

"Hot oatmeal breakfast keeps you fuller for longer," declared a Daily Mail article on a study funded by Quaker Oats.

"Study: Diet beverages better for losing weight than water," said a CBS Denver story about research funded by Coke and Pepsi's lobbying group.

The studies have their defenders.

Food companies say they follow guidelines to ensure scientific integrity, and that academics have the right to publish no matter what they find. Many in the research world also see industry funding as critical for advancing science as competition for [government funding](#) has intensified.

It's not surprising that companies would pay for research likely to show

the benefits of their products. But critics say the worry is that they're hijacking science for marketing purposes, and that they cherry-pick or hype findings.

The thinner-children-ate-candy research is an example. It was drawn from a government database of surveys that asks people to recall what they ate in the past 24 hours. The data "may not reflect usual intake" and "cause and effect associations cannot be drawn," the candy paper authors wrote in a section about the study's limitations.

The candy association's press release did not mention that and declared, "New study shows children and adolescents who eat candy are less overweight or obese."

The headline at [cbsnews.com](http://cbsnews.com): "Does candy keep kids from getting fat?"

Carol O'Neil, the LSU professor who made the "thin and clearly padded" remark, told The Associated Press through a university representative that data can be "publishable" even if it's thin. In a phone interview a week later, she said she did not recall why she made the remark, but that it was a reference to the abstract she had attached for her co-author to provide feedback on. She said she believed the full paper was "robust."

The flood of industry money in nutrition science partly reflects the field's challenges. Isolating the effect of any single food on a person's health can be difficult, as evidenced by the sea of conflicting findings.

The ambiguity and confusion has left the door open for marketers.

Since 2009, the authors of the candy paper have written more than two dozen papers funded by parties including Kellogg and industry groups for beef, milk and fruit juice.

Two are professors: O'Neil of LSU and Theresa Nicklas at the Baylor College of Medicine. The third is Victor Fulgoni, a former Kellogg executive and consultant whose website says he helps companies develop "aggressive, science-based claims about their products."

Their studies regularly delivered favorable conclusions for funders—or as they call them, "clients."

In a phone interview, Fulgoni said industry-funded studies show favorable results because companies invest in projects with the "best chance of success." He said any type of funding creates bias or pressure to deliver results.

"The same kind of questions you're asking me, you should be asking (National Institutes of Health) researchers," Fulgoni said.

It's true that industry-funded studies don't have a monopoly on the problems in scientific research. Still, Marion Nestle, a professor of nutrition at New York University (and no relation to the food company) said unlike other research, industry-funded studies "are designed and produced to be useful in marketing. The hypotheses are market driven."

In the past year, 156 of the 168 industry-funded studies Nestle reviewed showed favorable results for sponsors. She said playing up nutritional perks has become a critical marketing tool in the competitive food industry.

"The only thing that moves sales," she said, "is health claims."

"TROLLS"

The documents show how researchers can be motivated by financial concerns. In 2010, Nicklas said in an email she decided against attending

a General Mills health summit because she didn't want to "jeopardize" a proposal the group planned to submit to Kellogg. For another project, Fulgoni advised O'Neil against adding data.

"I suggest we focus on these first and 'hook' Kellogg for more funding before conducting more analyses," he wrote.

For the paper on candy-eating children, a disclosure says the funders had no role in the "design, analysis or writing of this manuscript." But emails obtained from LSU show the National Confectioners Association made a number of suggestions.

"You'll note I took most but not (all) their comments," Fulgoni wrote to O'Neil about the paper in 2010.

"I have finally waded through the comments from NCA. Attached is my attempt to edit based on their feedback," he wrote about a similar paper on candy consumption among adults.

The trumpeting of their research was also carefully timed. In June 2011, a candy association representative emailed O'Neil a critical article about a professor with industry ties.

"I'd like to monitor the fallout from this story, and give a little bit of distance to our research piece. I do not want to put you in the crossfire of a media on a rampage," wrote Laura Muma of FoodMinds, an agency that represented the candy association.

Fulgoni said the group runs manuscripts by clients to check for errors or omissions.

"It's more using them as a set of eyes to make sure we haven't forgotten something," he said.

O'Neil said she takes only "grammatical corrections from the clients—I can't speak for the others."

For the paper about candy and children, Chris Gindlesperger, a spokesman for the National Confectioners Association, said the group was given "the courtesy of reviewing the manuscript" and that its suggestions did not change results. He said other research not funded by industry came to the same conclusion, citing a paper that analyzed multiple studies.

O'Neil said she believed it was important to research foods such as nuts and milk to know whether they're good for you, and that it is difficult to get government funding for such studies. She said Fulgoni's consulting business, Nutrition Impact, gets most of the funding for their projects and that she receives reimbursements for costs such as travel, but no salary compensation. As research faculty, O'Neil is expected to publish.

A Baylor College of Medicine representative, Lori Williams, said all research funding goes through the college. She said the college did not receive payment from the candy association or Nutrition Impact for the paper on children and candy co-authored by Nicklas.

The records obtained by the AP show Nicklas sent Nutrition Impact an invoice for \$11,500 for three manuscripts in 2011, including \$2,500 for "candy." After being provided a copy of the invoice, Williams said the school began a review "surrounding funding and disclosures on this research."

"We take this very seriously, and your information is of significant concern to our leadership at the College," Williams wrote.

Papers co-authored by O'Neil and Nicklas also list support from the U.S. Department of Agriculture—general funding the two professors receive

from the department through their respective universities for research work.

—Another paper by the co-authors found a link between chickpeas and hummus and better nutrient intake. It was funded by Sabra Dipping Co. and a disclosure says funders had no input in drafting the manuscript.

But Sabra provided feedback that was incorporated. For a line on the benefits of "recipes made from chickpeas," for instance, it suggested tacking on, "such as hummus."

Sabra said it received a courtesy review for "providing clarifying notes and ensuring accuracy of product data."

The International Life Sciences Institute, which is funded by companies including McDonald's, Red Bull and Unilever, encourages scientific collaboration with industry. Eric Hentges, its executive director, said sponsors have long been able to provide comments to ensure excellency, but that authors have the final say.

Hentges said the goal is to improve quality—not change the results.

—For a study comparing breakfasts for children, the American Egg Board asked a University of Arkansas researcher to explain in a progress report the implications of her study for the egg industry.

"This could lead to increase(d) sales and profits," wrote Jamie Baum, an assistant professor of nutrition.

In a statement, Baum said it is standard for funders to ask about industry implications. She said she applies the same scientific rigor regardless of the funder.

An egg board representative, Mitch Kanter, said opinions about industry implications are irrelevant to the integrity of the research.

—Coca-Cola's former chief science officer, Rhona Applebaum, referred to industry critics as "trolls" in one of her regular emails with company-backed researchers, according to documents obtained from West Virginia University, where one of the researchers is the dean of the school of public health.

The roles of scientists and marketers sometimes blurred.

In 2013, a University of South Carolina professor, Steven Blair, asked Coca-Cola to fund a "Research & Message Management Strategic Plan."

"We must prepare and publicize 'our message' rather than let the media and other forces control the perception of our work," the plan said. It noted an upcoming study that would "generate enormous press" because of its findings about mothers and obesity.

"In other words, if you're fat, blame your mother's inactivity," the plan explained.

The media strategy included online videos responding to critics, magazine articles and "a series of bylines (instead of op-eds)."

Blair has been criticized for emphasizing the role of physical activity in preventing obesity and shifting blame away from food and drinks. A university representative, Wes Hickman, said the school stands behind Blair's [research](#) and that any suggestion that Blair ignored diet implications "is simply false."

In a statement, Coca-Cola said it is evaluating how it approaches health projects so that it can be a more "helpful and credible partner."



## OATS AND STANDARDS

In addition to studies that crunch data, companies pay for clinical trials that test the effects of food in humans. PepsiCo has funded and co-authored studies showing the benefits of oats as its Quaker empire has expanded to include oat-based treats like biscuits and "breakfast cookies."

In 2011, the company tested the hypothesis that its Quaker oatmeal and cold cereal would each be more filling than Honey Nut Cheerios, which is made by rival General Mills.

The oatmeal was more filling among the trial's 48 participants, but results were mixed for the cereal, Quaker Oatmeal Squares.

"I am sorry that the oat squares did not perform as well as hoped, but your hypotheses were validated with the oatmeal," wrote Frank Greenway, chief medical officer at Louisiana State University's Pennington Biomedical Research Center.

PepsiCo decided to publish only the results about its oatmeal. In statements, PepsiCo and the LSU researchers said the other half of the trial's results were not significant enough to merit publication.

Not everyone sees it that way.

Many researchers fear that the body of scientific literature is being distorted by withheld results. On its registry for clinical trials, the National Institutes of Health explains that reporting results reduces publication bias and facilitates systemic reviews.

"That's part of science. You publish the result you get. You don't just publish the results you want," said Deborah Zarin, who oversees the

registry at NIH.

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