As part of our examination of sweetener coverage, we analyzed opinions that directly compared HFCS to sugar (sucrose) along four important dimensions – composition, metabolism or chemical reactions, caloric value, and level of sweetness. There was no disagreement on the equivalent calorie count and sweetness of HFCS and sugar. All 12 opinions on the subject concluded that they had the same caloric values. There were only three opinions that compared the sweetness of HFCS to sugar, and all three agreed that both products had similar sweetness levels.

On the question of composition, however, there was more debate. We identified 20 opinions, about two thirds of which (65%) argued that HFCS and sugar were essentially the same. The remaining 35 percent of opinions argued that the compositions of HFCS and sugar were different in some way. These opinions came from an array of sources. Of those sources who argued HFCS and sugar have a similar composition, four represented industry, three were experts, two were reporters, two were health practitioners and two came from health and consumer advocacy groups. Opinions that HFCS and sugar were different came from experts (three opinions), health practitioners (two), the sugar industry (one) and a consumer (one).

The other comparison that received noticeable attention concerned the metabolism of HFCS and sugar. And on this dimension the results were more unexpected. Of the 26 opinions comparing metabolic properties, a majority (58%) argued against the metabolic equivalence of sweeteners, compared to 42%, who argued for their equivalence. Among our source categories, support for the position of metabolic equivalence was attributed to four experts, two health practitioners, two statements from the Center for Science in the Public Interest, two industry representatives, and one from the American Dietetic Association.

Among those who saw a difference, six opinions came from experts (including two apiece from Barry Popkin and George Bray), three from health practitioners, four from reporters with no attribution, and two from a residual category of other sources. It is notable that both experts and reporters presenting information on their own authority (i.e., without attribution to a source) were more plentiful in this category.

These distributions of opinion stand in contrast to statements from leading professional organizations that reviewed the totality of evidence. In 2008 the American Medical Association's Council on Science and Health issued a statement[2] that concluded, after reviewing the literature, "Because the composition of HFCS and sucrose are so similar, particularly on absorption by the body, it appears unlikely that HFCS contributes more to obesity or other conditions than sucrose."

In 2012, the Academy of Nutrition and Dietetics (formerly the American Dietetic Association) published a position paper that again reviewed the literature, including four previous review articles. The paper concluded, "These studies consistently found little evidence that HFCS differs uniquely from sucrose and other nutritive sweeteners in

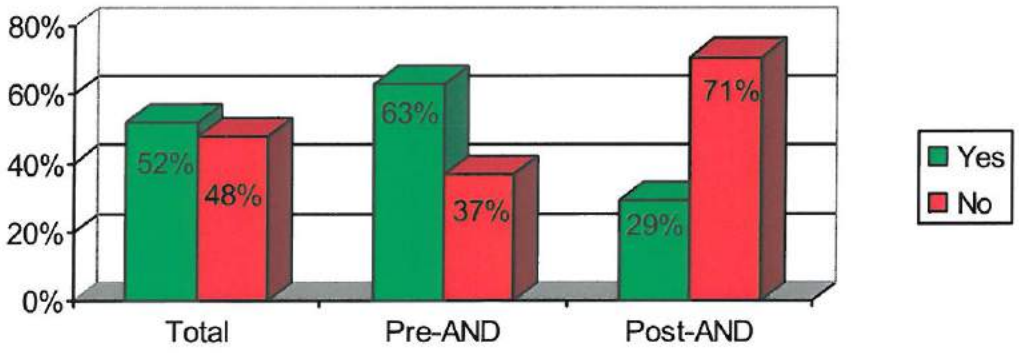
[2] http://www.ama-assn.org/resources/doc/csaph/csaph3a08-summary.pdf

metabolic effects (i.e., circulating glucose, insulin, postprandial triglycerides, leptin, and ghrelin), subjective effects (i.e., hunger, satiety, and energy intake at subsequent meals) and adverse effects such as risk of weight gain."[3]

The 2008 AMA statement was more cautious, emphasizing the need for additional studies and improved databases. The more forceful AND statement reflected research developments during the intervening years. (It also noted a need for long-term studies.) Of course, these differences reflected a lively debate that was waged throughout the past decade. To take this factor into account, we broke down opinions on the compositional and metabolic properties of HFCS vs. sucrose into those issued before and after the AND position paper appeared.

The results were surprising as can be seen in Figure 3. Throughout the entire sample period, there was a balance of opinion, with 52 percent of sources arguing that the composition or metabolic effects were equivalent and 48 percent arguing that they were different.

Figure 3
Are HFCS and Sucrose Equivalent?



Note: Opinions about the compositional and metabolic equivalence of HFCS and sucrose before and after the AND's 2012 position paper appeared.

However, out of the 46 opinions that appeared prior to the AND statement, 63 percent affirmed the compositional or metabolic equivalence of these substances, while 37% argued that they were different. Out of 14 opinions that appeared after the AND's statement, by contrast, only four (27%) argued for the equivalence of these substances, while 71 percent argued that they were different.

[3] Fitch, C., & Keim, K.S. (2012). Position of the Academy of Nutrition and Dietetics: Use of Nutritive and Nonnutritive Sweeteners. *Journal of the Academy of Nutrition and Dietetics*, 12(5), p. 749.

This is precisely the reverse of the pattern we expected. News reports did not change to conform more closely to the formal statement of an authoritative professional association. Instead, the news changed in the opposite direction, producing a divergence with the AND's position. We lack the evidence to determine the other factors that might have produced this shift in coverage, but the results certainly demonstrate that the development of scientific consensus was not reflected in the media coverage.