Dear Sir:

Bray et al (1) are correct that fructose consumption has increased, that increased consumption of caloric soft drinks has helped to fuel the obesity epidemic, that glucose and fructose are metabolized differently and have different effects on hormones involved in the regulation of body weight (2), and, therefore, that consumers would be better off consuming diet soft drinks. But in pointing a special finger of blame at high-fructose corn syrup (HFCS), the authors conflate correlation with causation. Soft drinks most likely would have contributed just as much to overweight and obesity even if they were still sweetened with sucrose.

The authors observe that before the increases in obesity beginning in the 1970s, soft drinks were sweetened with sucrose. But they fail to note that the acidic pH of soft drinks results in the hydrolysis of a significant proportion of sucrose into glucose and fructose before the drinks are consumed (the authors do acknowledge that sucrose is broken down into its component monosaccharides in the intestine) (3). The authors also suggest that substituting soft drinks for milk may have contributed to obesity (aside from any differences in calorie content), but that likely would have been the case regardless of the sweetener.

The body obtains similar amounts of glucose and fructose from consuming either sucrose or HFCS. [The weighted average of 2003 production from the US Department of Agriculture (USDA) of the 2 major types of HFCS (HFCS-42 and HFCS-55) indicates that HFCS provides almost exactly 50% glucose and 50% fructose.] The increase in consumption of soft drinks (and other foods that contain HFCS) would have yielded essentially the same increase of fructose intake, regardless of whether sucrose or HFCS was used. Thus, caloric soft drinks’ contribution to obesity is not likely to have been due to HFCS, but to other factors that increased consumption, including the following: 1) massive soft-drink advertising campaigns (about $6 billion over the past decade), 2) serving sizes that have increased over the years from 6.5-ounce (192 mL) bottles to 12-ounce (355 mL) cans to 20-ounce (591 mL) bottles and to 64-ounce (1893 mL) cups at some locations, 3) soft drinks having become a child’s standard drink at increasingly patronized fast-food restaurants (which sometimes offer free refills), 4) huge servings offered at cinemas and convenience stores, and 5) ubiquitous soft-drink vending machines (including in schools).

One difference between sucrose and HFCS is price. It costs companies 1 cent less to sweeten a 12-ounce can of soft drink with HFCS than with sucrose. That savings might increase a company’s profits, provided the company does not lower its prices. If it did lower its prices (forsaking the profits in favor of greater volume), a 1- or 2-cent difference in price would have little effect on consumption. It is more important to discourage excessive consumption of both sucrose and HFCS than to distinguish between foods sweetened with those ingredients. The USDA recommends that persons eating a 2000-calorie diet limit themselves to 10 teaspoons (40 g) of added sugars per day (4). That is about the amount in a 12-ounce soft drink (or 1.5 fruit-flavored 8-ounce cups of yogurt). To alert consumers to the amount of added sugars in soft drinks, the US Food and Drug Administration (FDA) should require a label notice on soft drinks advising people to limit their intake. More broadly, the FDA should adopt a daily value (DV) for added sugars (such as the USDA’s 40 g) and require companies to list on the nutrition facts label the number of grams of added sugars and the %DV per serving.

Michael F Jacobson

Center for Science in the Public Interest
1875 Connecticut Avenue
Suite 300
Washington, DC 20009
E-mail: mjacobson@cspinet.org

REFERENCES

Reply to MF Jacobson

Dear Sir:

The current obesity epidemic should be of concern to all Americans, because it will affect their future health and health care costs. We thus welcome the letter from Jacobson in response to our article in the Journal (1).

Jacobson makes several points with which we entirely agree, and these deserve to be emphasized again. We agree that massive soft-drink advertising campaigns, the increase in serving sizes from 6.5 oz (192 mL) to bottles containing up to 64 oz (1893 mL), and the increased intake of soft drinks by children and adults at fast-food restaurants, cinemas, and convenience stores are major contributors to the higher calorie intake that is fueling the obesity epidemic. Our paper cites extensive evidence of these trends (2, 3). We also agree that the ubiquitous vending machines (including in schools) make access to these sources of calories all too easy for children, who are becoming obese at an alarming rate.


Downloaded from https://academic.oup.com/ajcn/article-abstract/80/4/1081/4690364
1081 on 21 May 2018