Reviewer's report

Title: Food availability of glucose and fat, but not fructose, increased in the US between 1970 and 2009: Analysis of the USDA Food Availability Data System

Version: 1 Date: 9 February 2013

Reviewer: Peter Havel

Reviewer's report:

Drs. Carden and Carr have analyzed macronutrient and sugar availability in the U.S. food supply based on food availability/disappearance data from 2007 to 2009. They later draw conclusions based on the erroneous assumption that availability is indicative of intake. Based on their analysis, they conclude that protein, fat and carbohydrate (specifically glucose) availability have increased, whereas availability of monosaccharides increased only slightly and there was no net increase of fructose availability.

Comments:

The authors often discuss the percent energy from different macronutrients. The percent energy is not really meaningful compared with the total amount of energy. For example, if the percent energy of fat in the diet does not change (which some such as Gary Taubes have argued has even decreased), but total fat intake and therefore total energy per person from fat increases, then increased fat intake could contribute to weight gain and obesity without the percent energy from fat changing.

Food availability and disappearance data are an inadequate way to assess or even imply intake patterns since these measures do not account for food wastage (which is huge in the U.S. and not all types of food are likely to be wasted equally. In addition, it is possible that some types of available food could end up in animal feed.

Most importantly, the vast majority of evidence in which intake is assessed indicates that sugar consumption has increased and therefore fructose intake must have increased. For example, the per capita intake from sweetened beverages has increased by 170% from 70 kcal/day in 1977-1978 to 190 kcal/day in 1990-2000 http://www.nejm.org/doi/full/10.1056/NEJMp0902392. Sweetened beverages, are the largest single source of sugar in the U.S. diet. Since these beverages, whether sweetened with sucrose or HFCS, provide 50-55% of energy from fructose, it is clear that dietary fructose intake must have increased. It is highly unlikely that sugar intake from other sources, desserts, cookies, bread, etc. would have decreased sufficiently to lower total sugar and fructose intake such that there was no increase in net intake. In fact, the data in the paper suggest that the intake of most foods has increased. Therefore, the
conclusions of this study, based in food availability data, are flawed.

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

None