

‘Jury still out’ on sweeteners and metabolic effects

The available scientific literature does not support a link between intakes of artificial sweeteners and metabolic changes in children, says a new review from the US National Institute of Health.

While some data from observational studies does link artificially-sweetened beverage consumption and weight gain in children, the overall body of science does not support an association, according to a systematic review published in the International Journal of Pediatric Obesity.

“At the current time, the jury remains out regarding a possible role of increased artificial sweetener use in the [obesity](#) and diabetes epidemics, whether adverse, beneficial or neutral,” wrote the scientists, led by Rebecca Brown from the National Institute of Diabetes, Digestive and Kidney Diseases (NIH).

Billion dollar industry

The use of [sweeteners](#) in food and beverage products is widespread and has gathered yet more pace as food firms seek to deliver healthier products, with less sugar, to consumers. According to Leatherhead International, the global market for sweeteners was worth US\$1.83bn in 2007.

Although all the sweeteners used in the EU and US have been approved and are deemed safe by the food safety authorities, internet forums, newspaper reports and some scientific literature continue to rouse suspicion.

Indeed, according to background information in the article, Dr Brown and her co-workers note that various studies have reported both potential adverse effects and benefits.

Dr Brown recently reported that a synergistic effect between sucralose and glucose may trigger the release of the appetite-suppressing hormone glucagon-like peptide-1 (GLP-1), and therefore promote a feeling of fullness (Diabetes Care, Vol. 32, pp. 2184-2186).

Review details

In order to provide an update-to-date review of the science, the NIH scientists searched the literature for studies using the terms: “Artificial sweeteners, sweetener, sugar substitute, non-nutritive sweetener, intense sweetener, sucralose, aspartame, saccharin, sugar free, diabetes, weight, obesity, obese, metabolic syndrome, cholesterol, and blood pressure”.

Out of a total 116 studies identified only 18 human studies fulfilled the right criteria.

Epidemiological data suggested an association between artificial sweeteners and weight gain in children, said the researchers, but this does not establish causality, they added.

“It is particularly difficult to establish causality between artificial sweetener consumption, weight gain, and metabolic abnormalities, as artificial sweetener intake is likely to be an indicator for other variables,” explained Dr Brown and her co-workers. “For example, the decision to consume artificial sweeteners is often made by individuals who are concerned about their weight in an effort to reduce their caloric intake. In the case of children, this decision is frequently made by parents who are concerned about their own weight.”

When they looked at data from randomised controlled trials in children only a “very limited” amount was available, and this did not support beneficial or adverse effects, they said.

“Our growing understanding of the active metabolic role played by such chemicals in animal models should spur further research into the effects of these common food additives in humans,” concluded the authors.

Source: Food Navigator, By Stephen Daniells, 02-Feb-2010