Could Your Diet Drink Be Making You Fat?

The food and beverage industry has a wide variety of low/no-calorie sweeteners to choose from to lower the sugar (and often calorie) content of some of our favorite, sweet foods and drinks. We, as individuals, have a variety of choices too – the “yellow packets”, the “blue packets”, the “pink packets”, stevia extract, monk fruit extract, and more. Generally speaking, people seem to be either “in favor” of using these sugar substitutes or “against” them, saying they are all just as bad (or worse) for you, than sugar. In actuality, each sugar substitute has its own unique chemical structure, and therefore may impact the body in distinctly different ways. While all sugar substitutes on the market are regulated by the FDA and are considered to be safe, they shouldn’t all be lumped together as “good” or “bad”.

A recent study in the American Journal of Clinical Nutrition suggest that different sugar substitutes may have different effects on weight. The study compared 4 different sugar substitutes: saccharin (like in Sweet-n-Low), sucralose (like in Splenda), aspartame (like in Equal) and rebaudioside A (stevia extract, like in Truvia), to sucrose (table sugar), and was performed on 123 subjects that were overweight/obese and typically did not use sugar substitutes.

For 12 weeks, the subjects were randomly assigned to drink 5 ¼ - 7 ½ cups daily of a colored, Kool-aid beverage sweetened with sugar or one of the 4 sugar substitutes mentioned above (heavier subjects drank a larger volume). The subjects were measured and weighed and their % body fat/body composition was assessed. The number of calories they ate and the number of calories they burned were assessed, as well. Their blood sugar control was assessed using an oral glucose tolerance test. They were asked questions about their appetite as well as the overall taste of the beverage they consumed.

Those that drank the sugar-sweetened Kool-aid gained about 4 pounds, while those that drank the saccharin-sweetened beverage gained about 2 ½ pounds by the end of the 12 week study (both of which were statistically significant). The weight change in those that consumed the other sweeteners was not statistically significant, but was interesting: those that drank the aspartame-sweetened beverage gained about 1.6 pounds, those that drank the rebaudioside A gained about 1.3 pounds, and those that drank the sucralose-sweetened beverage lost about 1.7 pounds.

Use of these sugar substitutes for 12 weeks did not appear to affect insulin, blood sugar, cholesterol, or triglyceride levels. Those that drank the saccharin-sweetened drink reported higher levels of hunger (statistically significant), but other sensations associated with appetite were not statistically different among the different sweeteners.

BOTTOM LINE: It’s always a good idea to avoid sugary beverages, but you can’t assume that all sugar-free drinks are the same. In this study, saccharin use was associated with weight gain and reports of more hunger than sucralose, aspartame, and stevia extract. While the study concluded that sucralose did not have a significant effect
on body weight, it’s worth noting that the weights of those in the sucralose group were trending downward and were significantly lower than those of all the other sugar substitute groups at the end of the study. If you have further questions about weight control, sugar substitutes, or any other nutrition-related matter, be sure to set up a nutrition assessment with Campus Recreation’s registered dietitian nutritionist, Annie Bell. Appointments are individualized and last about an hour – oh, and they’re free! Follow the prompts here to register: https://campusrec.utsa.edu/nutritionregistration

References:
https://www.nutritionaction.com/daily/sugar-in-food/not-all-sweeteners-are-alike/
https://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/in-depth/artificial-sweeteners/art-20046936