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THE SWEET LIFE

understanding artificial sweeteners and sugar substitutes

BY KRISTEN CASTILLO



Pink packets, blue packets and yellow packets. You see them everywhere – from restaurants to grocery store shelves. No matter what the color or the brand name, they all have one thing in common – they’re artificial sweeteners. But before you stir one into your next cup of coffee, consider whether or not any of these sugar substitutes are right for you.

sweet stats

The Food and Drug Administration (FDA), which regulates and approves artificial sweeteners, has approved five artificial sweeteners under their Generally Recognized as Safe (GRAS) standards. Those sweeteners include aspartame (brand names includes Equal and NutraSweet), saccharin (Sweet ‘N Low) and sucralose (Splenda), as well as acesulfame potassium (Sweet One) and neotame.

The FDA has also approved plant-based, natural sweetener agave nectar, which has some calories, but since it’s sweeter than sugar, less can be used. Another plant-based sweetener, stevia (also known as rebaudioside A, Truvia and PureVia), has no calories. In addition, these sweeteners are natural; Stevia, for example, is water extracted from the stevia plant and then purified.

According to ICIS, an information provider for the chemical and energy industries, artificial

sweeteners are predicted to be a \$3.2 billion dollar industry by 2012. *Forbes* magazine reports Splenda is the number one sugar substitute in the U.S., followed by Truvia.

Whether plant-based or artificial, these sugar substitutes are hundreds of times sweeter than table sugar and can replace that sugar in everything, from cakes and cookies to iced tea and yogurt. But the question is, do you want to use these products?

weight loss versus weight gain

The sweet taste of artificial sweeteners can make the body think it's getting sugar. Diabetics often use artificial sweeteners as a sugar substitute. Still many non-diabetics use artificial sweeteners in an effort to lose weight or maintain weight loss.

But some studies suggest artificial sweeteners may not help weight loss after all. "You'll end up craving more sugar and you'll consume more sugar," says Dr. Michele Raihel, N.D., C.M.O., founder and CEO of Revolutions Natural Medical Solutions in Folsom. "People who use artificial sweeteners end up eating more simple carbohydrates."

For example, in a study by psychologists at the Ingestive Behavior Research Center at Purdue University, rats were fed yogurt sweetened with glucose, similar to sugar. Other rats ate yogurt sweetened with no-calorie saccharin. The rats that ate the saccharin ended up eating more calories and gaining more weight. The study's authors concluded that artificial sweeteners change the way the rat's body regulates itself. The researchers add that "although the results are consistent with the idea that humans would show similar effects, human study is required for further demonstration." (Editor's note: To view the researchers' entire article which appeared in the February 2008 issue of *Behavioral Neuroscience*, published by the American Psychological Association, visit apa.org.)

"There is some literature that suggests similar findings to the consumption of regular soft drinks; the consumption of diet drinks can put you at risk for obesity," says Professor of Nutrition and Internal Medicine at U.C. Davis, Carl L. Keen, Ph.D., noting that one argument made in this area is that the sweet taste of an artificial sweetener may make an individual crave sweeter tasting foods in their overall diet. "This is an area of considerable ongoing debate."

cancer connection

In the '70s, when lab rats were given high doses of saccharin, many of the rats had increased rates of bladder cancer... and thus started the debate about the connection between artificial sweetener and cancer. But further studies showed the cancer risk only applied to rats.

Nowadays, the National Cancer Institute (NCI) says research into FDA-approved artificial sweeteners does not show "clear evidence of an association with cancer in humans."

Aspartame raised similar concerns in the '80s and '90s, but when the NCI reviewed data from more than half a million retirees, they determined that "increasing consumption of

aspartame-containing beverages was not associated with the development of lymphoma, leukemia or brain cancer."

Professor Keen says the use of artificial sweeteners is an emotional debate. "There is no solid scientific consensus regarding the safety, or risks, associated with the use of artificial sweeteners," he says. "Rather, there's a lot of feeling going on. Some people feel there may be a risk, so they avoid them for that reason, but others simply want to minimize all things that are artificial in their diets. It's an emotional argument."

people with pku

Another aspartame concern exists for people who have PKU, an inherited condition where the body can't break down phenylalanine. Those people need to avoid aspartame, because it contains phenylalanine.

eliminating artificial sweeteners?

Many products have artificial sweeteners, but there's also an interest to get rid of them. "There's a strong move among many food companies to remove artificial sweeteners from their products," says Professor Keen. "While this action is not necessarily science-based, it's a good policy for them, based on the fact that this is something many people want."

cutting sugar and artificial sweeteners

Consumers often want to remove artificial sweeteners and sugar from their lifestyles. "There are some that argue that while diet drinks may not be inherently bad for you, water is better and for that reason soft drinks in general should be avoided," says Professor Keen. "It is worth noting that this argument is based on the belief that water is superior to soft drinks, not that artificial sweeteners are bad."

Dr. Raihel encourages her patients to break away from sugar and artificial sweeteners. "Sugar is an addiction," she says. "Sugar is a drug. Once you kick the addiction and habit, you don't crave it." Dr. Raihel advocates patient education as the start of a solution to individual health problems including diabetes, as well as sugar consumption. "If you're going to have something sweet, you want it to be natural," says Dr. Raihel, noting that honey and blackstrap molasses are natural sweeteners. "If you are really, really good and have nothing sweet for an entire week, then on Sunday, have something sweet," she says. "Make it a healthy dark chocolate."

Studies on the effects of sugar substitutes continue, with more long-term studies in the works. In fact, the National Institutes of Health is currently studying what impact artificial sweeteners have on hormone levels, blood sugar and appetite, with results to be released in June 2012. And, the debate on the use of sugar substitutes rages. While consumers decide which products to consume, health professionals agree moderation is important. Whether using table sugar, artificial sweeteners or natural sweeteners, patients should check with their doctor and health care professionals before making any dietary change. •