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# Weighing In

APRIL 2016

## To Drink or Not to Drink-- That Is the Question

As we begin this month of April and another newsletter, we will address questions that patients have asked this past month about diet sodas. Why are people who drink diet sodas rather than regular sodas more likely to be overweight or obese?? Scientists were never really certain for the longest time. Two theories of thought began to emerge. Either artificial sweeteners were actually causing people to gain weight, or people who drank diet sodas were more likely to consume a higher calorie diet than those who drank regular soda or none at all.

As researchers began conducting multiple experiments, some interesting facts emerged. For example, researchers at the University of Miami studying 2,564 people found that drinking diet soda daily increased the risk of stroke or other vascular events by 61.5% over a nine-year period. This bad news also comes from research done in a large multicultural northern Manhattan New York study. Researchers there accounted for participants' age, sex, and race. They also accounted for seeing, their smoking habits, exercise habits, and subjects' their daily alcohol consumption as well as their daily caloric intake. Even after they took into account the subjects' metabolism, their peripheral vascular disease and heart disease history, diet soda drinkers still had a 48% higher risk of the disease than people who drank no soda. The findings are not necessarily proof that diet soda increases the risk of stroke, say the researchers. However, this is where the correlation to diet comes in: people who drink diet soda are more likely to be eating unhealthy diets. Maybe this is the reason that prompts them to use nutritionally useless soda altogether.

Another interesting study I found was performed in Israel by Dr. Eran Elinav, director of research at Israel's Weizmann Institute of Science. This study found that people who drink diet soda over regular sodas are more likely to become obese. Researchers found that the artificial sweetener changed the composition of gut bacteria over time, which could explain why these patients became more glucose intolerant over the same period. Prolonged glucose intolerance leads to conditions like obesity and diabetes type II and some diabetes type I. So those very illnesses that people were trying to avoid by drinking diet sodas inevitably became their very nemesis because of diet sodas!

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Dr. Elinav explained it this way: Our relationship with our own mixed bag of gut bacteria is a huge factor in determining how we process food and how the food that we eat affects us. "Especially intriguing is the link between the use of artificial sweeteners and the bacteria in our guts which has a tendency to develop a very disorder they were designed to prevent. This calls for the reassessment of today's massive unsupervised consumption of these drinks."

To explore the connection between the artificial sweeteners and gut bacteria, he first conducted a series of experiments on mice. He had mice ingest either saccharine, sucralose, or aspartame. These common artificial sweeteners which are used in diet sodas and other food groups were added to the drinking water of the mice pups. The control groups of the mice pups got either plain water or sugared water. After one week he found that mice that drank artificially sweetened water developed significant glucose intolerance. Both groups that were given either plain or sugared water had a normal blood sugar level. When the doctor gave the glucose intolerant mice an antibody to wipe out their gut bacteria, their blood sugar returned to normal, proving that there is a connection between gut bacteria and glucose intolerance.

Then he decided to try it on patients. He examined the data of diets of 381 non-diabetic people between the ages 30 to 65 who were part of an ongoing nutritional study that collected data about the flora of their gut bacteria. He found that those who reported eating more artificial sweeteners were more likely to be heavier, have larger waistlines, and have higher blood sugar levels when fasting than those who did not consume them. They were also more likely have a certain unhealthy family of bacteria in common.

He then completed a controlled experiment to complement his observational data. He recruited seven healthy volunteers ages 28 to 40 who normally avoided artificial sweeteners and told them to consume the maximum amount that the FDA would allow. This would be similar to a 150 pound person eating nine packets of Sweet 'n Low throughout the week. Researchers monitored their gut flora bacteria by examining their feces. After seven days, four out of seven began to develop glucose intolerance. They also had pronounced changes in the micro-bacteria of their colons. Those changes could have been in response to artificial sweeteners, suggest the authors. We have an estimated hundred trillion bacteria in our intestines. They help us digest our foods, but that is not all. Emerging research like what was done in Israel links imbalances in the gut bacteria to conditions such as obesity, type I diabetes, celiac disease and Crohn's disease, just to name a few.

In an additional study at the University of California San Diego, physicians performed functional MRI scans on volunteers who took small sips of water sweetened either with sugar or with sucralose or aspartame. They found that natural sugar activated regions of the brain involved in the food reward system while sucralose and aspartame did not.

It is possible, say the authors, that sucralose or aspartame "may not fully satisfy the desire for the natural caloric sweet ingestion," so while sugar signals a positive response, artificial sweeteners may not be effective in managing the cravings for sweets. Now this is quite evident when you watch people walking out of your local 7-11 or Sheets or any other convenient store. Notice how they hold a diet drink in one hand and a candy bar or a bag of cookies in the other. It seems to prove just what the University of California physicians found.

So when we at The Weigh Station question you about whether or not you use diet drinks, you can now understand that there is a host of reasons why we do. And now you can see why questions keep coming up from our patients wanting to know why we restrict these drinks. The next time you think about having a diet drink or eating something with artificial sweeteners, reread this newsletter as I think it will make a huge difference in how you will view artificial sweeteners.

I leave you with this parting thought: May we suggest a piece of fruit for your sweet tooth? Just be sure to watch your portions --don't eat more than what we tell you to.

Blessings to all,  
Chuck Shaffer MD

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### **Ketosis and Exercise**

You have started the Weigh Station program to improve your health, congratulations! At some point many patients decide to also begin exercising. There are a few things you should keep in mind before starting a new exercise regimen while in ketosis. This article will help you learn just what you need to know to succeed!

First things first, please let our staff know if you start or change your exercise routine. Your level of calories may need to be adjusted. Although many think they need to increase their protein, fat is actually what will more than likely need to be adjusted. Unlike a typical American diet that fuels off of glycogen (sugar), a ketogenic diet uses saturated fat as its primary fuel source. Limiting fat (or keeping it the same) while increasing protein with exercise may be detrimental to your weight loss success. This is because your liver can easily convert extra protein to glucose (sugar) and cause you to come out of ketosis. Talk with our staff about the type of exercise you are doing, and about the intensity and frequency you exercise on a weekly basis. We will need this information to make the right recommendations for you.

It's also important to understand the time it takes to adapt to a ketogenic diet while exercising. It may take as long as a month (or more) for your body to adapt to using ketones for energy instead of glycogen. This means you may feel low on energy during your workouts. If you were exercising prior to starting the program and were fueling with carbs this will be particularly obvious. Overtime, however your body will adapt and become more efficient in using ketones for energy and you will begin feeling better during your workouts, so don't give up!

Fueling properly is essential to reaching your goals. A small piece of fruit and sting cheese would be a great choice about 30 minutes before exercising, especially if it has been several hours since your last meal. You want to make sure you have something easy to digest since during exercise your body's focus shifts to getting oxygen to your muscles instead of your stomach for digestion. After the workout (within 30 minutes) a handful of nuts and cottage cheese would work well. During your main meals you will want to ensure that you have adequate fat. Our program recommends four servings per day, however you may need more depending on your level of activity.

If you have specific questions about exercise let us know! We are more than happy to help J

Tricia Foley, MS, RD, CLT



# Recipe of the month

## Roasted Cabbage with Lime and Sriracha

Makes 3-4 servings; (Recipe adapted from Kalyn's Kitchen)

### Ingredients:

1 medium-sized head of firm cabbage  
2 T olive oil  
2 T fresh squeezed lime juice (or slightly more if you really like lime)  
2 tsp. Sriracha Sauce (no sugar added)  
1/4 tsp salt

### Instructions:

Preheat oven to 450F/230C. Spray a baking sheet with non-stick spray or oil. (I used a small baking sheet, but if your cabbage is large you'll need a full-size one.)

Cut the cabbage into four same-size pieces and remove any outer leaves that are discolored or wilted. Then cut away the core part from each piece and discard the core. Carefully cut each piece in half to make 8 same-size wedges.

Place each piece of cabbage on the baking sheet, arranging so the wedges are not touching each other. Whisk together the oil, lime juice, Sriracha Sauce, and salt to make the glazing mixture; then brush the mixture over the cabbage with a pastry brush. Carefully turn each piece of cabbage over and brush the other side, reserving some liquid to brush again when you turn the cabbage after it's roasted on one side.

Roast in the center of the oven for 15-17 minutes, or until the edges of the cabbage are starting to get brown. Use a large turner to carefully turn the hot cabbage pieces, then brush again with the remaining lime-Sriracha-oil mixture.

Roast for 15-17 minutes more, or until the second side is starting to brown. Remove from oven, place on serving dish, and sprinkle with sesame seeds if using. Serve hot.

