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MOUNT CARMEL
A Member of Trinity Health

# DIABETES ONE DAY AT A TIME

## INSIDE THIS ISSUE



# Clear, Clean, Refreshing...*Water!*

*By Suzanne Christman, MS, RD, LD, CDCES, BSN, RN*

Water is a vital part of life. It supplies nutrients to our cells, gets rid of wastes, protects joints and organs, and maintains body temperature. Most of us do not consume enough water. We should strive to drink half our body weight in ounces of water each day. For example, a 150# adult would need about nine cups or 72 ounces a day.

**We have many choices when it comes to consuming water.**

### TAP WATER

Good old fashion straight from the kitchen sink. The environmental protection agency regulates the safety of tap water. They ensure water contains minerals needed for health while minimizing harmful pesticides and other chemicals. Although the USA has one of the safest public water supplies, one in five Americans don't trust the water quality.

Many do not like the taste of tap water and prefer to drink bottled water thus creating a billion-dollar industry. In 2024 Americans spent $98.5 billion dollars on bottled water.

Bottled water labels are confusing. Terms like electrolytes, minerals, and salts (all meaning the same thing) are used to entice us into thinking that bottled water is more healthy than tap water. These terms refer to magnesium, potassium, calcium, sodium, and other trace minerals that tap water normally contains. In this article, minerals will be used to describe substances found or removed from different bottled waters. Other labels use words like "glacier," "raw" or "mountain" water to make us think these types of waters are somehow healthier. However, they are less regulated and may not contain the purest or most mineral-dense forms of water.

# Clear, Clean, Refreshing...*Water!* *cont.*

### PURIFIED WATER

Most bottled water sources are plain old Tap water that has been purified. Purifying is a process of one or more ways to remove 90-99.5% of minerals, chemicals, contaminants, and impurities from water making it suitable for drinking. Deionization, reverse osmosis and distillation are other terms referring to this process. Distillation creates very pure water that lacks essential minerals. This water should not be consumed.

### FILTERED WATER

Ground or tap water that is processed to remove impurities and contaminates to make the water cleaner for drinking. This water goes through less processing than purified water.

### SPRING OR NATURAL WATER

Mother Nature providing a pure source of water that is naturally filtered from under the ground. It is not purified so it is more alkaline than tap water. It is treated to remove some pollutants allowing the water to taste better while maintaining essential minerals. Adding some cucumber, sea salt or ginger to the water can enhance the taste.

### MINERAL WATER

Obtained from mineral springs with natural occurring gases so it has a higher amount of minerals leading to a more minerally taste. Drinking this water promotes hydration in athletes because the higher mineral content replaces electrolytes lost from excess sweat and heat. Some companies artificially add carbon dioxide to increase the bubbles. The term mineral water can be deceiving since it is used to identify any carbonated or soda water.

### CARBONATED WATER

Once water is purified it can undergo an artificial process that adds carbon dioxide for carbonation or bicarbonate salts to create bubbles or fizz. These waters are marketed as club soda, or soda, bubbly, and sparkling water. Compared to tap water the only benefits to drinking these waters are the natural or artificial flavorings added for taste.

### SPARKLING WATER

Two types of sparkling water, naturally occurring and made artificially using a sparkling water system. Store bought sparkling water doesn't contain any additives unless it is flavored with fruit "essence" or oils.

### SELTZER WATER

A type of sparkling water that adds carbon dioxide to produce the bubbles.

### SODA WATER

Made by infusing spring water with carbon dioxide under pressure, creating its fizz.

### CLUB SODA

Like sparkling water, club soda contains the same minerals. However, club soda requires bicarbonate of soda to be added so it's fizzier than sparkling water. The addition of bicarbonate of soda also keeps the bubbles fizzing when alcohol is added.

### ALKALINE WATER

The environmental protection agency states that the best water pH level is 7 (range 6.5-8.5). The higher the pH the more alkaline the water. Natural spring water contains alkaline properties. Bottled water uses ionization to add hydrogen to water increasing its pH level. Minerals like calcium, potassium, magnesium, and iron must also be added (alkaline minerals). Some people believe that higher pH levels are needed to balance the bodies acidic levels and improve or prevent some health issues. Companies are using this as a marketing strategy to sell more water. More research is needed to see if increased pH levels in water have any health benefits.

### CONCLUSION!

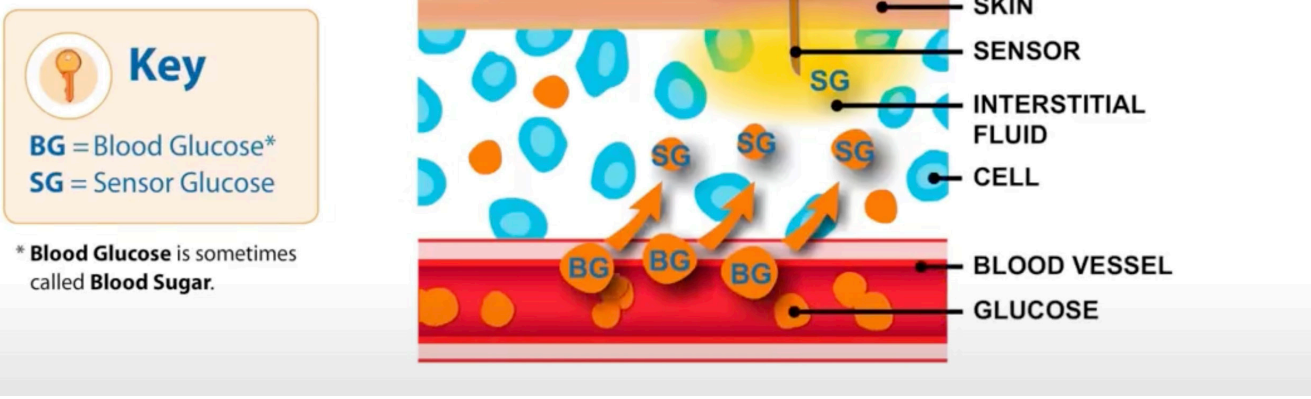
Most companies do not disclose where they get their source of water or how it is treated. As stated earlier most bottled water is just Tap water that has been purified (minerals removed). These minerals are vital for life so removing them doesn't provide any health benefits over drinking tap water. For example, these products lack fluoride. Fluoride is added to tap water to prevent tooth decay and promote new bone growth.

To save money try enhancing the taste of tap water by using an individual water filter or a whole house filtering system. These can remove harmful particles from the water to make it taste better.

Overall, not all waters taste the same and individuals have different taste preferences. Therefore no one type of water is the best! The number one priority is to drink safe, uncontaminated water to ensure adequate hydration.

# Finger Sticks vs CGM – Why Don't the Numbers Match?

*By Fred Maggiore,*
*A member of Mount Carmel St. Ann's Diabetes Support Group*




**Continuous Glucose Monitors (CGMs) have revolutionized Diabetic Treatment** as the biggest non-drug advancement since introducing the hand-held Glucometer in the early 1980s. While these devices seem to do the same thing, they are different technologies and many People with Diabetes need to understand why the readings from CGMs and Glucometers do not match.

## WHO'S RIGHT? WELL, BOTH COULD BE.

It is important to realize that while both devices give you a "Glucose Reading", they use different technologies to collect and measure the data. It is like comparing apples and oranges. Both are fruit. Both are good for you. But they are both different.

Here is a pictorial of what goes on…

- Carbohydrates (fuel for the body) get digested and moves from the intestines to the bloodstream as glucose.
- Glucometer readings (Finger sticks) are based on these blood glucose (BG) readings.
- The glucose moves into the interstitial fluid, where the individual cells absorb the glucose.
- Sensor readings (CGMs) are based on data obtained from the interstitial fluid layer.
- The movement from blood glucose (BG) to sensor glucose (SG) varies from person to person, taking about 10-15 minutes.

**There is an inherent difference in the readings, as they are measuring unique events.**

- **Glucometers measure glucose in the blood.**
- **CGMs measure glucose in the interstitial fluid.**

Each CGM manufacturer will have a table on their website that defines what differences in readings are acceptable, and reflects the difference in technologies.

There are both device mechanics and environmental factors that can affect the "Glucose Readings" from either device.

**Finger Stick Techniques**
Did you forget to wash your hands? Did you use soap or alcohol? What type of soap did you use? Did you wipe off the first drop of blood if cleaning with alcohol? When did you change the lancing device? Are the test strips expired? Did the test strip get a full sample of blood for the reading? How hard did you have to squeeze your finger to get a large enough sample of blood for the test strip? When was the last time you ran a control on the meter to test its accuracy? All these factors could affect the accuracy of the BG results.

**Sensor Issues**
Are you wearing the device on a site approved by the FDA? Did you clean the area with alcohol prior to attaching the device to the site? Is the device firmly attached to the skin? For people with hairy site locations, did you shave the hair before attaching the device? Have you applied the device within the past 24 hours?

**Dehydration**
Are you well hydrated? Both devices work off fluid volume (Interstitial or blood). Dehydration could alter the amount and concentration of the remaining fluid.

**Extreme environmental temperatures**
Have you been out in the sun all day tanning, working in the yard, water or snow skiing, or snowmobiling? With both devices, you are testing from an area that is just under the first layer of skin. If you have overexposed your skin to extreme temperatures, it could affect the results.

**Medication effects**
Consult your Health Care Team (HCT) about the medications you are prescribed, as some medications can affect the accuracy of readings. Even Over-The-Counter (OTC) items like Tylenol, Aspirin, Vitamins, (especially vitamin C) can also affect the readings.

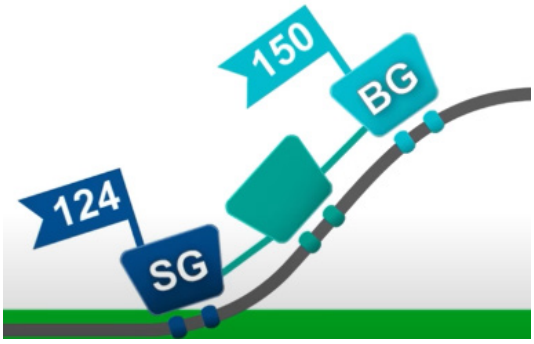

# Finger Sticks vs CGM – Why Don't the Numbers Match? *continued*

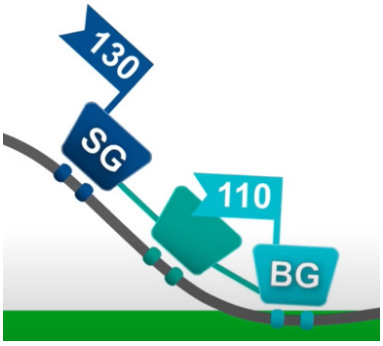
### GLUCOSE VOLATILITY (GV)

Glucose Volatility refers to a big swing in values in either direction. GV can explain the differences in BG and SG readings.

Think of a train of cars on a Roller Coaster track. The train is about 15 minutes long (see the pictures below). Blood Glucose is the train's engine; while the SG is the train's caboose.

- **When you consume carbohydrates** at a meal or snack, the BG will rise first. This is to be expected, since the glucose enters the bloodstream before entering the interstitial fluid.
- **As the BG enters the cells** leaving the bloodstream, the BG level decreases and the SG level increases. People can expect this outcome after taking diabetes medication and/or exercising.




You can see there would be a normal difference in device readings. Neither reading matches the other, but both would be right. For other factors that can affect BG results refer to Adam Brown's book, Bright Spots and Landmines. He lists 42 factors that can affect BS levels.

A CGM is not just a replacement of a Glucometer. Just like today's smartphones differ from the rotary dial phones of the 1950s (But they both make phone calls.) CGMs are a different technology. Awareness of the **direction, speed, and magnitude** of the readings is the biggest CGM takeaway, rather than specific point-in-time comparison readings with older technology.

Always remember, well-managed diabetes is the leading cause of … nothing!

**References**

https://www.medtronicdiabetes.com/customer-support/sensors-and-transmitters-support/why-sensor-glucose-does-not-equal-blood-glucose

42 Factors That Affect Blood Glucose?! A Surprising Update | DiaTribe

# CALENDAR OF EVENTS

*Enjoy the following events*

### IN PERSON DIABETES SUPPORT GROUP

These fun, informal sessions are for people coping with diabetes. Friends and family welcome.

Call **614-546-4582** to learn more.

Mount Carmel St. Ann's
**SEP 25, OCT 23, NOV 20**
6:30 – 8:00 p.m.

Mount Carmel East
**SEP 25, OCT 22, NOV 26**
6:00 – 7:30 p.m.

Mount Carmel Grove City
**SEP 24, OCT 22, NOV 26**
6:00 – 7:30 p.m

### VIRTUAL DIABETES 101

**DECEMBER 3** | 5:30 – 6:30 p.m.

These free virtual classes cover diabetes basics, like blood sugar monitoring, medications, nutrition, physical activity, and weight management. Call **614-546-4582** to register.

### SUGGESTED WEB SITES:

- American Diabetes Association
- CDC-Centers for Disease Control and Prevention
- National Institutes of Health
- Diabetes Advocates
- USDA Center for Nutrition Policy and Promotion
- diaTribe
- Mount Carmel Healthy Living Center

# Mediterranean Low Carb Broccoli Salad

### INGREDIENTS

**5 cups of broccoli, cut into small florets**
**½ cup artichoke hearts marinated in olive oil, and sliced**
**½ cup sun-dried tomatoes in olive oil, roughly chopped, oil squeezed out**
**½ cup pitted kalamata olives, halved**
**⅓cup red onion, diced**
**¼ cup roasted and salted sunflower seeds**

### FOR THE DRESSING

**2 cups plain, non-fat Greek yogurt**
**Zest and juice of 1 large lemon**
**4 ½ tsp Monk fruit ( or granulated sweetener of choice)**
**1 ¾ tsp dried oregano**
**1 ½ tsp fresh garlic**
**1 ½ tsp dried ground basil**
**1 ½ tsp dried thyme**
**1 tsp sea salt**
**Pepper**

### DIRECTIONS

1. In a large bowl, mix together all of the salad ingredients.
2. In a medium bowl, stir together all of the dressing ingredients.
3. Pour the dressing over the broccoli and stir to coat well. Cover and refrigerate for at least 2 hours, up to overnight, so that broccoli can absorb the dressing and develop flavor.

NUTRITION FACTS PER SERVING:

Calories 182, Carbohydrate 14.7g, Protein 5.9 g, Saturated Fat 0.9 g, Cholesterol 4.6 g, Sodium 365 mg

Source: https://www.foodfaithfitness.com

*Enjoy this easy and healthy side salad for any occasion.*

# GLP-1 Diabetes Medications and Foods that Promote Weight Loss

*By Jackie Haskins, RDN, LD, CDCES*

*You have probably heard about the diabetes medicines that are famous for weight loss and lowering blood sugar. Victoza, Trulicity, Ozempic and Rybelsus are the familiar names of GLP-1 (Glucagon-Like Peptide-1) medications. Mounjaro is the common name for GLP-1 with GIP (Gastric Inhibitory Peptide). These medications are a once a day or once a week injectable, except Rybelsus, which is a daily pill.*

## HOW DO THESE MEDICINES WORK?

**GLP-1 and GIP work in three ways:**

1. **Slows stomach emptying.** Helps you feel full and eat less.
2. **Tells the pancreas to release insulin when you eat.** Insulin is a hormone that helps lower blood sugar.
3. **Blocks glucagon release from the pancreas**. Glucagon is a hormone that raises blood sugar.

GLP-1 and GIP are hormones we naturally make and release in the gut. When we have diabetes, GLP-1 and GIP gut hormones may not work as well as they used to. GLP-1 and GLP-1 with GIP medicines are options to help overcome this gut hormone issue. Besides weight loss and improved blood sugar, these medications may also reduce the risk of heart attack and stroke.

## POTENTIAL SIDE EFFECT RISKS OF GLP-1 AND GLP-1 WITH GIP MEDICATIONS

Side effect risks include nausea, vomiting, diarrhea, injection site reaction and acute pancreatitis (severe abdominal pain, vomiting). Side effects may be reduced by starting at a low dose and the dose increased slowly. People with a family history of medullary thyroid tumor should not take these medications.

## DID YOU KNOW YOU CAN INCREASE GLP-1 AND GIP GUT HORMONES NATURALLY WITH FOOD?

Foods that may help keep your blood sugar from rising quickly and aide weight loss include:

1. **Protein:** Eggs
2. **Fats:** Avocados, nuts, olive oil
3. **Whole Grains:** Oats, brown rice, quinoa, barley, rye, and whole wheat
4. **Fruit:** Blueberries and strawberries
5. **Legumes:** Beans, lentils, and chickpeas
6. **Vegetables:** Broccoli, carrots, brussels sprouts, spinach, kale, and Swiss chard

Food may not be as potent as the GLP-1 or GLP-1 with GIP medications, but they can have a positive effect on blood sugar and weight management . These healthy foods can also improve digestion, decrease inflammation, and provide important vitamins and minerals.

GLP-1 and GLP-1 with GIP medications and certain food choices can boost hormones that help regulate blood sugar and promote weight loss. Discuss with your health provider whether a GLP-1 or GLP-1 with GIP medication is right for you. GLP-1 and GIP boosting food choices can also help toward your healthier blood sugar and weight goals.