

## SODA HISTORY

Soda sales are mind blowing! Worldwide, there are \$350 billion in annual sales. The average American drinks more than 54 gallons of soda a year. We are truly addicted to them. The history of how they came to be is quite fascinating however.

The first documented “soft-drink” was formulated in the 1700’s when non-carbonated water was mixed with lemon juice and honey. It was an alternative to “hard drinks” such as liquor. Naturally carbonated water existed and was thought to have medicinal qualities, specifically relieving gastrointestinal complaints. In 1776, Dr. Joseph Priestly invented a way to infuse CO<sub>2</sub> with water creating carbonic acid and the first man-made carbonated water. Johann Jacob Schweppe who created the world’s first carbonated mineral water perfected the process in 1783.

John Matthews, who immigrated to New York from England, is thought of as the father of Soda. In 1832, he invented a machine to carbonate water and started adding flavorings such as fruit, vegetables, chocolate but even odd things like eggs and nuts.

Initially, sodas were sold in pharmacies as tonics. That's why pharmacists made many of the early formulations. They were also used as delivery mechanisms for medications. The first type of modernly known soda was ginger ale. Originally, it was called ginger beer in the early 1800’s. At that time, real ginger was used and was felt to have many gastrointestinal benefits. Even today, ginger ale is thought to help with nausea despite the fact that today’s ginger ale contains no real ginger, just chemically derived compounds (to make it taste like ginger). Real ginger contains compounds called *gingerols*, which do have some beneficial effects on the gut. Gingerol is in the same family as *capsaicin*, the compound that gives spicy foods their kick and *piperine*, the compound in pepper. Canada Dry Ginger Ale was the first commercial brand of ginger ale and it came from Canada in 1907. Ginger ale rose in popularity during the prohibition as it was used in mixed drinks and was fermented itself.

Today, ginger ale is made with artificial ginger flavorings (chemicals) and high fructose corn syrup (HFCS). HFCS is much cheaper than sugar and also much sweeter, increasing its addictive qualities. As far as sugar use goes, the largest consumers of sugar worldwide are the soft drink industry and the two highest users are the Coca Cola Company and PepsiCo. Both are among the top 250 largest companies worldwide.

Root Beer. It’s been around for centuries. It started as a root tea made from berries, roots and was fermented. It used to be called “small beer” and was safer to drink than the local water, which was often contaminated with sewage and caused dysentery.

1876 it was first made as a carbonated beverage.

Dr. Pepper. First developed by pharmacist Charles Alderton in Waco, Texas, this was the first soda to hit the market in 1886 (1 year before Coca Cola). It was first developed using various herbs and spices however no one really knows the recipe. The original recipe is divided into two halves and is stored in 2 different safes somewhere in Dallas. Although originally sweetened with natural sugar, in the 1980’s sugar was replaced by HFCS. In some countries, Dr. Pepper still has natural sugar but not in our home country! In 1904, it was given away for free at the World’s Fair in St. Louis and its popularity skyrocketed.

Coca Cola. In 1886, pharmacist John Pemberton developed Coca Cola. For the first 17 years, it actually contained cocaine in it. Cocaine is derived from the coca plant, a shrub native to Central and South America. Indigenous populations chewed its leaves. It provided increased stamina, suppressed hunger and, not surprisingly, led to mild euphoria. Mr. Pemberton started by trying to produce a wine, fortified with coca leaves, cola nut extract and caffeine. He called it Pemberton’s French Wine Coca.

It became very popular but during prohibition, he was forced to remove the alcohol component and he replaced it with sugar syrup, carbonated water and Coca Cola was born. In 1903, the cocaine was removed from the soda because of the obvious issues associated with the drug. The cola nut comes from an African tree and it has a significant amount of caffeine and was used in many sodas. In more recent years, it has been replaced with easier and cheaper to manufacture chemicals.

Pepsi Cola also has pharmaceutical roots. It was created by pharmacist Caleb Bradhem in 1893 and was offered at soda fountains in his pharmacy. It was originally called Brad's Drink. It was promoted as a tonic to boost energy and aid digestion. Its name was changed to Pepsi Cola because of one of its main ingredients *pepsin*, a digestive enzyme. It also contained cola nut extract, hence the name Pepsi Cola. In 1931, Pepsi went bankrupt because of the high costs of sugar during the war and the company was sold to a candy manufacturer Loft Inc.

7Up was developed in 1929 by Charles Leiper Grigg. It originally contained the mood altering and stabilizing drug lithium citrate. The first version of 7Up was called "Bib Label Lithiated Lemon Lime Soda" and eventually was simplified to 7Up. It was marketed as "taking the ouch out of grouch". Lithium remained a component of 7Up until 1950 when the dangerous side effects of lithium became more understood.

Mountain Dew was invented in 1948 by brothers Barney and Ally Hartman who had a beverage bottling company in Tennessee. It was created as a mixer for alcohol during prohibition. The name Mountain Dew is actually slang for moonshine. PepsiCo eventually purchased the company in 1964.

These sodas are highly addictive. As an example, 20% of the drinkers of Mountain Dew are responsible for 70% of its sales. Just like the modern food companies whose main goal it to more deeply addict the existing consumers, the cola companies really target and try to more deeply addict their heavy users.

Sodas have absolutely no nutritional value in them. They actually have negative nutritional value because of what it takes to process them. They started as a means to deliver medicines. Today, they are a means to deliver sugar. A typical 12 oz bottle (small by today's standards) of Mountain Dew is 46 grams of sugar. That's almost 10 teaspoons of sugar! A 12 oz bottle of Coke is 40 grams of sugar. Because the sugar is delivered in liquid form, it gets absorbed into and hits your body hard and fast.

**Bone Density.** Cola drinkers have lower bone density. This is because the high amount of phosphorus in the soda which inhibits calcium absorption. However, the phosphoric acid in cola also causes a release of calcium out of your bones. The alkaline calcium helps to buffer the acidic phosphoric acid in the blood. The caffeine in soda is not a direct problem but in the environment of high acidity, there is an amplified effect of losing calcium resulting in bone loss. In addition, it is a nervous system stimulant.

**Obesity.** Independent studies find that there is a direct correlation between obesity and sugar-sweetened beverage. By the way, studies funded by the soda companies did not find such a connection. Big surprise.

**Diabetes.** 1-2 sodas a day is correlated with a 26% risk of developing type 2 diabetes. It also significantly increases the risk for insulin resistance, metabolic syndrome and cardiovascular disease. The massive amounts of sugar, there is a tremendous surge in sugar (77 grams in the case of Mountain Dew) leading to a massive release of insulin from the pancreas. That much sugar in your blood is dangerous so the body tried to push it into the cells, hence the insulin release. Over time, the insulin become resistant and does not work as well (insulin resistance). Once the cells are filled, the muscles then fill up with glycogen and then the liver gets involved converting the sugar into glycogen for storage. As the liver gets saturated, the process of lipogenesis (new fat formation) begins along

with production of VLDL (very low density lipoprotein), a very bad form of cholesterol. This is how sugar gets turned into fat.

**Addiction.** Sugar stimulates the “feel good” neurotransmitter dopamine. This leads to the “sugar high”. And this is followed by depression when the sugar is gone and dopamine levels drop. Even “sugar free” sodas still stimulate the brain. Daily diet soda drinkers had a 3x greater risk of developing dementia and/or having a stroke. Artificial sweeteners are excitatory neurotoxins.