

# Effect of consumption of sodas

Food & Diet



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## **Carbonated Beverages: How Are We Affected?**

The history of carbonated drinks dates back to the 1760s when individuals were looking for ways to reproduce naturally occurring carbonated water, which was thought to be a great health benefit. At this point, water was the only carbonated liquid and did not contain added sugar. A century after carbonation techniques were developed, J. S. Pemberton, an Atlanta pharmacist, combined kola, a nut from Africa containing caffeine, and coco, a stimulant from South America, to create Coca-Cola. This beverage was sold as a tonic, an invigorating or strengthening medicine, like other sweetened beverages developed in the 1800s. The first factory to mass produce Coca-Cola was developed around 1904 after Asa Candler purchased the legal rights to the formula from Pemberton. Since the introduction of soft drinks into society, these sugar and artificially sweetened drinks have only become more popular. Sodas are frequently consumed, but are they harmful, do they have health benefits, or neither? The alarming rate at which soft drinks are being consumed should be explored in light of the recommended intake amounts and negative health consequences.

Data from multiple studies indicates an increase in soft drink consumption among Americans of all age groups. The US Department of Agriculture stated that over the past 50 years the per capita soda consumption has increased by almost 500 percent. Soft drinks, most of which are sugar sweetened instead of artificially, are consumed daily by half of the American population. One study found that out of 830 preschoolers, ages two through five, about 100 children (12%) drank on average 9 ounces or more of soft drinks a day. In this study, 187 out of 557 school-aged children, ages six through twelve, <https://assignbuster.com/effect-of-consumption-of-sodas/>

consumed 9 ounces or more of soft drinks each day. In addition, one-fourth of adolescents (106 out of 423) ages thirteen through eighteen, ingested more than 26 ounces of soda every day. These statistics are staggering especially when considering the young age at which individuals are when they begin consuming these liquids and when comparing these findings to the US Department of Agriculture's and the American Heart Association's recommendations. The US Department of Agriculture recommends the maximum amount of added sugar in the diet be 32 grams or less. A 12-ounce soft drink on average contains about 36 grams of sugar, which is above the recommended amount, and contains 145 calories. The American Heart Association recommends consuming no more than 100 to 150 calories of added sugar a day. Drinking one 12-ounce bottle or can of soda a day equals the recommended daily maximum quantity of calories from added sugar and is above the recommended amount for added sugar intake. Keep in mind this does not include or take into account the other foods and beverages consumed in a day and the added sugar and calories present in those substances; meaning, the consumption of soft drinks is not healthy as they already exceed or meet the limit for two recommendations.

In the American diet, there is a large amount of added sugars; the leading source of these added sugars is soft drinks. The US Department of Agriculture suggests the maximum amount of added sugar intake be 32 grams or less a day. As mentioned earlier, a 12-ounce bottle of soda contains approximately 36 grams of sugar. In one study, children and adolescents who drank larger amounts of soft drinks a day consumed about 141 grams of added sugar just from the sodas. These children consumed about 4.5 times

the recommended amount of added sugar per day; this measurement does not include the other food and liquid items consumed within those twenty-four hours. The average American over the age of two years consumes 54.7 grams a day from high fructose corn syrup, which is the sole sweetener in United States' soft drinks. As seen, sodas contain large amounts of carbohydrates, in the forms of high fructose corn syrup and sugar, that are absorbed quickly. Because of these attributes, soft drinks can have detrimental health effects.

The consumption of soft drinks has been associated with an increased risk of several medical problems including the following: dental caries, urinary or kidney stones, the decrease of bone mineral density, inflammation, blood pressure elevation, increased risk of diabetes, and the development of hypertension, in addition to others. The consumption of soft drinks leading to dental cavities was mainly seen among subjects consuming the sugar sweetened products, as too much sugar can lead to teeth decay. Some studies provided evidence showing a connection between soft drink consumption and the development of urinary or kidney stones. When other risk factors (such as calcium, potassium, and sucrose intake) had been controlled, the effects of soda ingestion were no longer significant. This discovery suggests that urinary or kidney stones may be a consequence of soft drinks' effects on other factors such as calcium intake. Milk consumption has been shown to decline with the increase of soda intake.

One of the primary preventions of osteoporosis is maximizing bone density during the younger stage of life from childhood to young adulthood. Early life calcium intake accounts for about an eight percent difference in the mass of

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adult bones. This statistic may seem slight, but the difference accounts for a 50 percent higher risk of hip fracture in later years. Researchers have hypothesized that a low ratio of calcium to phosphorus throughout the diet may heighten the chances of bone fracture in addition to osteoporosis. These scientists then turned their attention to soft drinks and determined that the ratio of calcium to phosphorus declined with the increase of soda consumption.

Data collected from the National Health and Nutrition Examination Survey showed an association between the consumption of soft drinks and the increase in both systolic and diastolic blood pressure. In addition, the intake of soft drinks results in rapid increased in blood glucose as well as insulin concentrations. This has been shown to contribute to a high dietary Glycaemic Load, meaning soft drinks have a greater effect on the blood sugar either directly or indirectly. The caramel coloring in the cola sodas contains large amounts of advanced glycation end products. High Glycaemic Load diets are thought to stimulate appetite, thus promoting weight gain. These diets have also been shown to cause inflammation, glucose intolerance, increase the risk of cardiovascular disease and diabetes, as well as insulin resistance. Inflammation influences thrombosis, atherosclerosis, and plaque stability. As defined by MedicineNet, thrombosis is “ the formation or presence of a blood clot in a blood vessel,” and atherosclerosis is the clogging of arteries by fatty deposits.

A number of studies show that soft drinks increase the risk of diabetes. This may occur independently of obesity as sodas are contributors to a high dietary Glycaemic Load, inflammation, insulin resistance, and high blood

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pressure. Four studies ranging from eight to eighteen years followed women keeping track of the amount of soft drinks they consumed during those times and determined how likely those women were to develop diabetes. Two of the four studies lasted eight years; 91, 249 women participated in one study and 50, 000 in the other. The study of 91, 249 women determined those who drank 1 serving or more a day were twice as likely to develop diabetes compared to the women who drank less than one serving a month. The other study consisting of 50, 000 women and lasting eight years determined that those who consumed 1 or more servings of soft drinks a day had an 83% higher risk of developing diabetes than did those who consumed less than one serving a month. The Black Women's Health Study lasted ten years, contained 40, 000 women, and determined those who drank two or more servings a day had a 24% larger risk of developing diabetes compared to those who drank less than one serving a month. Lastly, researchers followed 70, 000 women for 18 years and found that the women who drank two to three soft drinks a day had a 31% larger risk of developing diabetes than the women who drank less than one soda a month. Thus, these studies show a pattern of soda consumption with an increased risk of developing diabetes.

Evidence shows an increase in hypertension among soda consumers. The Framingham Offspring Study discovered individuals who consumed one or more soft drinks a day possessed a 22% higher incidence of hypertension than non-consumers. Another set of studies comparing hypertension incidences with soda intake were the Nurses' Health Studies I and II. These studies determined women consuming four or more soft drinks a day had

between a 28% and 44% higher risk of incident hypertension than did the women who were infrequent consumers of soft drinks.

Another health concern associated with soft drink consumption is the development of heart disease. In the Nurses' Health Study, an association was found between the risk of clinical coronary heart disease and the intake of sodas even after accounting for various unhealthy factors. In another study, over 88, 000 women were followed for twenty-four years. It was determined that the women consuming two or more soft drinks a day possessed a 35% greater risk of developing clinical coronary heart disease when compared to the women who drank less than one soft drink a month.

The consumption of sodas has been associated with increased body weight as well as obesity. Two reasons soft drinks are linked to weight gain are decreased satiety and not taking into account the number of calories ingested from a soft drink while eating. If the number of calories consumed does not reduce by an equivalent number of calories taken in through soda, then weight gain is expected. In addition, the larger the soda consumption in childhood and adolescent years leads to weight gain in adulthood. In the United States, the prevalence of overweight youths between the ages of six and seventeen has more than doubled in the past thirty years.

Approximately 11% of American youths in that age range are seriously overweight. The Framingham Offspring Study lasted four years with 4, 000 participants and found that compared to infrequent soft drink consumers, those that drank one or more sodas a day had a 37% higher chance of being obese. In a study over eight years, 50, 000 nurses were followed, and it was shown that a higher consumption of soft drinks was associated with a

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greater magnitude of weight gain. There were 810 participants in the Clinical Trial of Comprehensive Lifestyle Modification for Blood Pressure Control study which showed that a reduction of one serving of soda a day was associated with a weight loss of 0.49 kg, approximately 1.08 pounds, after six months and 0.65 kg, approximately 1.43 pounds, after eighteen months.

Limiting the amount of soft drinks consumed in a day and even a month is an easy way to boost one's health and decrease the possibility of heart disease, diabetes, hypertension, inflammation, too much sugar intake, obesity, weight gain, and many other health issues. It is especially important to limit the amount of sodas children ingest as it can have an even larger impact on those areas later in life. Instead of drinking soda, drink more water. Water quenches thirst without stimulating a desire for more sweets or food, and it has zero calories as well as no added sugar. Soft drinks are fine when consumed in moderation, but when abused, they are harmful.