

# Two Colas A Day May Shorten Your Lifespan

Adam Whiteley

Beloit College, Beloit, WI

## Method

Information was retrieved from peer reviewed, government, university and other internet sources.

## Results

It has been commonly accepted by physicians that the daily consumption of phosphoric acid in soft drinks contributes to kidney disease; it wasn't until recently that hard evidence proved it. The study "Carbonated beverages and Chronic Kidney disease," showed that consuming 2 or more colas of soft drinks with high phosphoric acid (ex. Colas) content contributed to a doubled risk for kidney disease (4). Taking data from 465 patients with newly diagnosed chronic kidney disease and 467 patients without chronic kidney disease the study examined the relationship between soft drinks and the prevalence of kidney disease(4). Although some controversy surrounded the fact that the high co2 and caffeine content found in soft drinks was thought to contribute to the prevalence of kidney disease in soft drink consumers. To find out if those concerns held any weight the study used non carbonated soft drinks and non caffeinated soft drinks containing phosphoric acid and found that the result only varied slightly from fully carbonated and caffeinated soft drinks containing phosphoric acid (4). One in ten people suffer from kidney disease in the united states. But the consumption of soft drinks has grown by 135% since 1977 (5). In recent years the consumption of Diet drinks has taken the place of normal soft drinks, although they still contain phosphoric acid. Phosphoric acid taxes the kidneys as they try to filter out unwanted material the body is consuming, putting immense strain on the organs. Another study focused on the loss of bone density in daily cola drinkers. The study published in the American Journal of Clinical Nutrition found that daily consumers of more then one cola a day, diet and non-caffeinated colas included, had lower bone density in the femoral and hip area. This study found this to be true only in women and not men (3). Although some of the bone density loss is contributed, again, to carbonation, the fact that other carbonated beverages not containing phosphorus acid lacked the same effect shows phosphorus acid is the main contributor. Finally, the daily consumption of soft drinks containing phosphoric acid will deteriorate tooth strength and enamel, especially when sipped slowly and frequently. The consumption of non diet soft drinks containing phosphoric acid is doubly dangerous for the teeth. As the sugar in regular soft drinks is converted to acid by bacteria in the mouth ([http://www.dental-health.com/sodapop\\_teethenamel.html](http://www.dental-health.com/sodapop_teethenamel.html)).

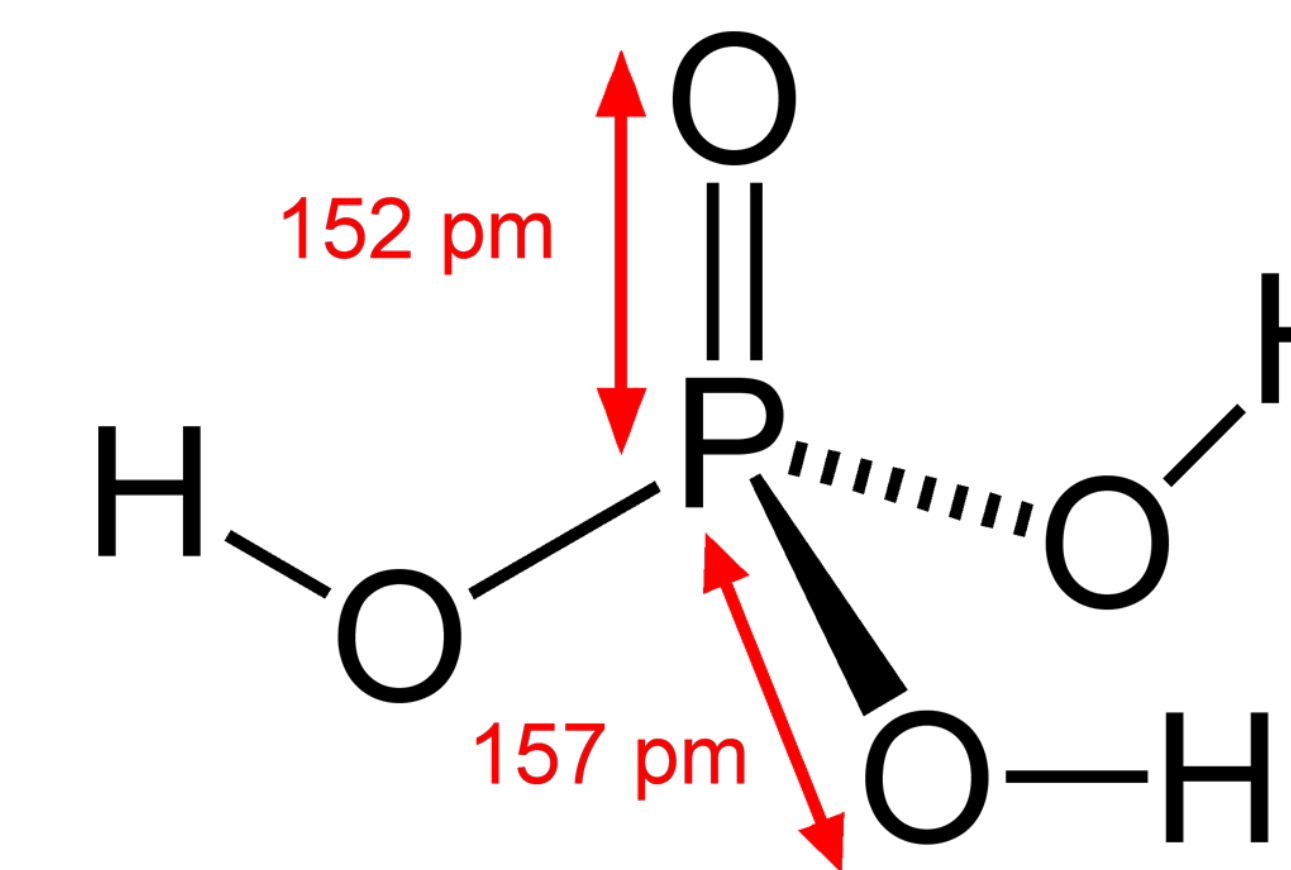
Conclusion: The consumption of 2 or more soft drinks containing phosphoric acid will increase your chances of kidney disease, and in women lower bone density. For both male and female this rate of consumption will also contribute to the loss of tooth strength and enamel.

## Figure 2: Teeth decay due to soda consumption



Source: [http://www.dental-health.com/sodapop\\_teethenamel.html](http://www.dental-health.com/sodapop_teethenamel.html)

Figure 3: Chemical Structure of Phos. Acid



Source: <http://upload.wikimedia.org/wikipedia/commons/5/58/Phosphoric-acid-2D-dimensions.png>

## Discussion

Based on the research, consuming soft drinks on a daily basis is hazardous to your health. The effects not attributed to phosphoric acid, obesity, cancer, and bladder problems are just as dangerous. But kidney disease, lowered bone density, and tooth decay are very real problems to be contemplated. If you must consume soft drinks do it on rare occasions and try to drink beverages with low amounts of phosphoric acid. Of course the best solution is to just drink water. You should ponder the fact that the largest marketing campaign of any food product was made by the coca-cola corporation (for coke zero), and think about exactly what you are putting into your body.

## References

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Fig 4: Acidity of Soft drinks due to Phosphoric Acid

What's in Your Drink?	
Tap Water	
Mug Root Beer	4.038
Diet 7 Up	3.706
Diet Mountain Dew	3.365
Sprite	3.298
Diet Coke	3.289
Mountain Dew	3.229
7 Up	3.202
Diet Dr. Pepper	3.169
Slice Orange	3.059
Diet Pepsi	3.031
Lemon Nestea	2.969
Dr. Pepper	2.899
Squirt	2.898
Lemon Brisk	2.868
Pepsi	2.530
Coke	2.525
Cherry Coke	2.522
RC Cola	2.387

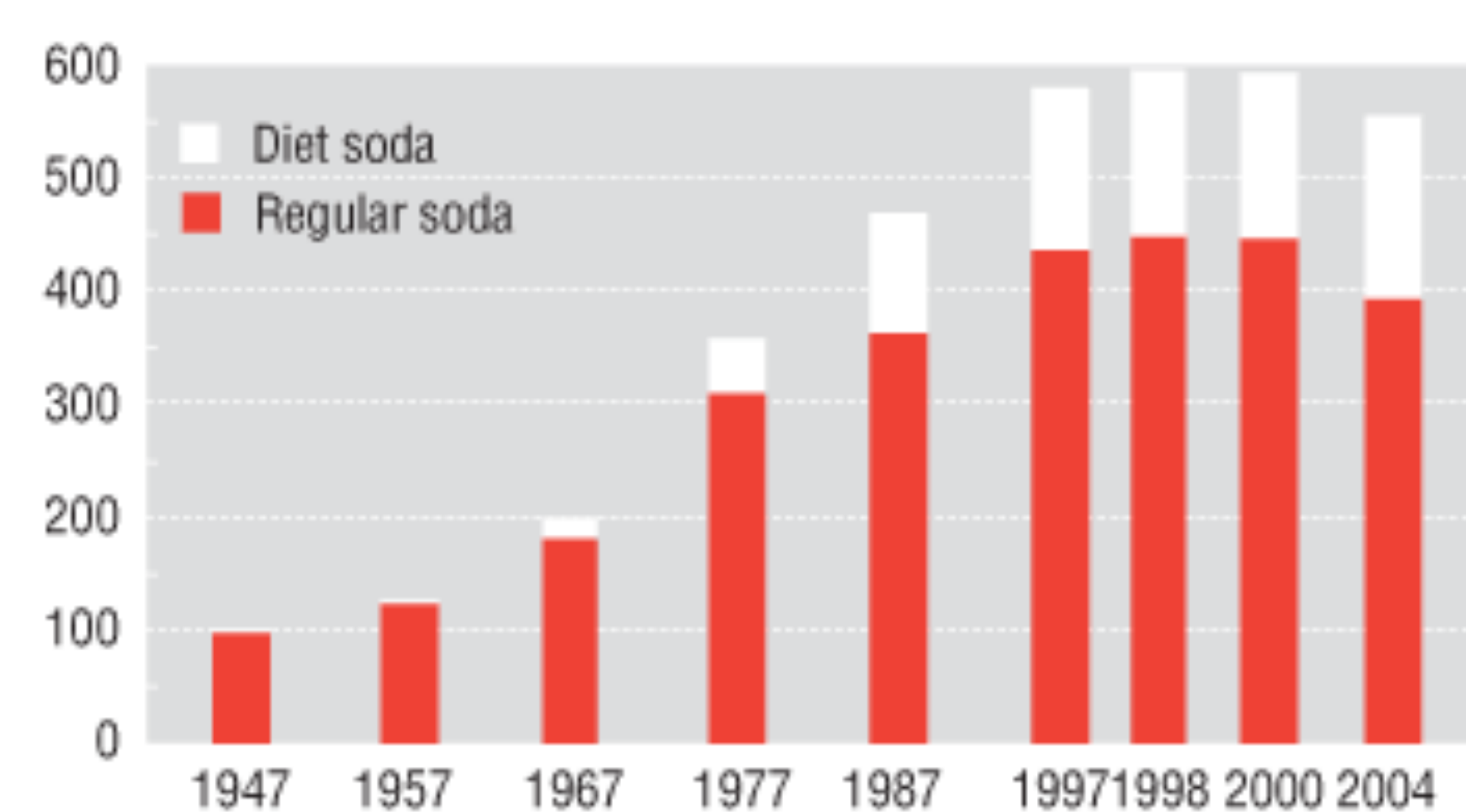
SOURCE: Jain, Nihil, Sobkowski, Agustin  
General Dentistry, March/April 2007

Source: [http://www.livescience.com/images/070321\\_](http://www.livescience.com/images/070321_)

## Abstract

Consuming 2 colas, or sodas containing Phosphoric acid, may shorten your lifespan. Phosphoric acid is added to food to give it a tangy and acidic taste as well as a preservation chemical and mold deterrent (1). My research focuses on the comparison of studies on soda drinkers, phosphoric acid contents in varying soda, and why phosphoric acid has such an effect on the human body. Significant research indicates the consumption of phosphoric acid on a daily basis will double the chances of kidney disease and other health problems (4). The results of the research show that consuming phosphoric acid on a daily basis will result in the doubled chance for kidney disease and damage, as well as the risk for calcium deterioration in teeth and bones (3). While there is no substantial proof that consuming small amounts of phosphoric acid on occasion will damage the kidneys, there is still a risk for tooth decay, especially if consumed slowly.

Figure 1  
Annual soft drink production in the United States  
(12-oz. cans/person)



Sources: USDA Economic Research Service (1947-87); Beverage Digest (1997-2004).

Source: <http://www.diseaseproof.com/archives/Annual%20Soft%20Drink%20Production%20US.gif>

## Introduction

America is the largest consumer of soda in the world. Americans now consume 600 12 once servings per person every year. Although the consumption of diet and non caloric soft drinks have risen in an attempt to decrease unwanted side effects, phosphoric acid (H3PO4) is still present in the most heavily consumed soft drinks (ex. Cola) (1). "Phosphoric acid is a crystalline acid" and in its most concentrated form appears to be a thick syrup like fluid. Phosphoric acid itself is added to food products, most notably soft drinks, to give it a tangy and acidic flavor. It is also added to prevent mold and as a preservative (1). Recent studies have shown that consuming phosphoric acid on a daily basis will double the chances for kidney disease(2,4). Studies also indicate to lowered bone density for female soda consumers. It is also now commonly acknowledged that drinking soft drinks containing phosphoric acid is extremely detrimental to teeth enamel (2,3). There is skepticism that caffeine and the high amount of carbonation found in soft drinks is also a contributing factor. Research on the effects of drinking phosphoric acid in large quantity are not as prevalent as research on other ingredients in soda. This is because the effects of phosphoric acid are not as immediate as sugar or caffeine. Now that the consumption of soft drinks has risen so dramatically over the past 50 years and that the decades of highest consumption are now 20 years behind us we can see the effects of drinking soda clearer and thus the effects of consuming phosphoric acid. I hypothesize that drinking any amount of phosphoric acid on a daily basis will contribute to kidney disease, lowered bone density and tooth deterioration.