

Soft Drinks + Orthodontic Treatment =

A Recipe for Disaster

Soft drinks, including regular and diet soda pop, fruit drinks, sports drinks and energy drinks, weaken tooth enamel. They are even harder on teeth with orthodontic "appliances," such as braces or aligners. **It is recommended that you avoid soft drinks during your orthodontic treatment** so that your teeth stay healthy and strong, and you finish your treatment with a good bite and a healthy, beautiful smile.

Acid is the Culprit

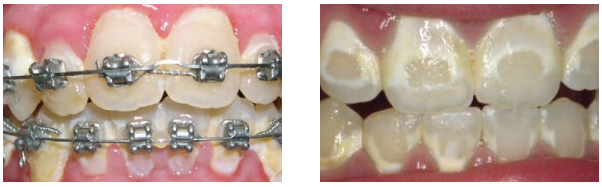
Soft drinks contain acids. Acid pulls calcium out of the enamel, making the tooth soft to the touch. Acid dissolves tooth enamel, a process called "decalcification," and can lead to cavities. Once enamel dissolves, it does not come back. The loss is permanent.

Acid + Sugar = Double Trouble!



Plaque is a sticky, colorless film made up of bacteria, food debris and saliva that constantly forms on your teeth. Plaque uses sugar and starches as food, and expels acid as a by-product, creating a stain on the surface of the tooth. If plaque is not removed regularly by brushing and flossing, the build-up can lead to decalcification, cavities, gum disease, and loss of the bone that holds teeth in place. Coupled with acid that is present in soft drinks, drinking liquids containing sugar doubles the risk to tooth enamel.

How Soft Drinks Affect Teeth with Braces



White marks like these on teeth are the result of decalcification, and are permanent. If you don't remove the plaque that collects around brackets, between teeth and under the gums, decalcification can be evident within four months.

How Soft Drinks Affect Teeth While Wearing Aligners



Liquids seep into aligners when you take a drink, and the liquid is held against the teeth until the aligner is removed. If the liquid contains acid, the prolonged exposure accelerates damage to teeth. This can lead to extensive decay (pictured above, right) and the need for expensive restorations that may need to be repeated periodically over a lifetime.



The list to the right shows pH levels of a variety of soft drinks. The lower the number, the more acidic the liquid is. Tooth enamel begins to dissolve at a pH level of 5.5.*

pH Values

- Chemicals are classified as “acids” or “bases”
- The pH value measures how acidic or basic a solution is; values range from 0 - 14
- High pH = base; Low pH = acid
- Materials that are neither acids nor bases are neutral; water is neutral at 7.0 pH
- The lower the pH value, the more erosive it is for tooth enamel
- Tooth enamel begins to dissolve at 5.5 pH

The Life Cycle of a Cavity

PLAQUE + SUGAR

ACID ▶ DECALCIFICATION ▶ PERMANENT WHITE MARKS ON TEETH

CAVITIES

Be Smart

- Avoid soft drinks, especially during orthodontic treatment
- Drink water and milk
- Brush and floss as recommended
- Fluoride strengthens teeth – use fluoride toothpaste and a fluoride rinse
- See your dentist at least every six months for a professional cleaning and check-up, or more often if recommended

If You Must Drink a Soft Drink

- Drink soft drinks through a straw
- Have soft drinks with a meal
- Brush right away after drinking a soft drink; if you can’t brush right away, at least rinse with water
- Drink the soft drink quickly; avoid sipping over a long period of time – each sip renews the acid attack on teeth

Questions?

Talk them over with your orthodontist and/or orthodontic staff, the professionals who are always your best source of information and advice about your orthodontic treatment.

Liquids *(including test drinks*)*	pH
Hydrochloric acid**	0.0
Battery acid***	1.0
Stomach acid**	1.5
Coca-Cola (regular)	2.60
Pepsi (regular)	2.62
Coca-Cola (diet)	2.62
Lemonade (Minute Maid)	2.63
Powerade (Mountain Berry Blast)	2.67
Powerade (Fruit Punch)	2.67
Powerade Zero (Strawberry)	2.72
Hawaiian Punch (Fruit Juicy Red)	2.82
Powerade Zero (Grape)	2.84
5-Hour Energy (Pomegranate)	2.91
Pepsi (diet)	2.97
Dr. Pepper (regular)	2.98
Gatorade (Orange)	2.99
Gatorade (Fruit Punch)	3.03
Propel (Lemon)	3.08
Propel (Black Cherry)	3.10
Sunkist (regular)	3.13
Capri Sun (Red Berry)	3.19
Dr. Pepper (diet)	3.22
Sprite (regular)	3.26
Mountain Dew (regular)	3.34
7-Up (regular)	3.35
Sprite Zero	3.40
Mountain Dew (diet)	3.42
Red Bull Energy Drink (main flavor)	3.50
Sunkist (diet)	3.54
Monster Energy (regular)	3.59
7-Up (diet)	3.64
Apple Juice (Mott’s)	3.75
Orange Juice (Tropicana - no pulp)	3.93
Tomato Juice (Campbell’s)	4.12
Tea (Gold Peak - unsweetened)	4.25
A&W Root Beer (regular)	4.43
A&W Root Beer (diet)	4.65
Coffee (black, freshly brewed)	6.12
Milk (Prairie Farms 2%)	6.70
Pure water** (neutral)	7.00

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** pH testing of 36 soft drinks was commissioned by the American Association of Orthodontists and performed by St. Louis Testing Laboratories.*

*** chemistry.about.com*

**** U.S. National Library of Medicine*

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