

UNDERSTANDING PH & ACIDITY

Every time we eat/drink, the pH in the mouth becomes acidic

when pH drops below 5.5, small amounts of tooth mineral dissolve & are trapped at surface in the biofilm

HEALTHY MOUTH / BALANCED SYSTEM

Within 15-30 min, saliva and good bacteria around our in the biofilm-BOTH of which help buffer the pH & raise the pH to a healthy pH

**pH recovers
& mineral
returns to
teeth**

UNHEALTHY MOUTH / IMBALANCED SYSTEM

Inability to recover to healthy pH caused by prolonged periods of low pH

**NET
MINERAL
LOSS
from teeth**

pH TABLE 1

pH of Sodas

Soda	pH (stand. dev.)
7UP Cherry	2.98 (0.01)
Boylan's Black Cherry	2.76 (0.02)
Boylan's Grape	2.91 (0.01)
Boylan's Sugar Cane Cola	2.54 (0.01)
Canada Dry Ginger Ale	2.82 (0.01)
Coca-Cola Caffeine Free	2.34 (0.03)
Coca-Cola Cherry	2.38 (0.03)
Coca-Cola Cherry Zero	2.93 (0.01)
Coca-Cola Classic	2.37 (0.03)
Coca-Cola Lime Diet	2.96 (0.03)
Coca-Cola Zero	2.96 (0.03)
Crush Grape	2.76 (0.01)
Crush Orange	2.87 (0.01)
Diet Pepper	2.88 (0.04)
Fanta Grape (2 liter)	2.67 (0.02)
Fanta Orange	2.82 (0.02)
Fanta Pineapple (2 liter)	2.79 (0.02)
Fanta Strawberry	2.84 (0.01)
Grapico	2.77 (0.03)
Hansen's Cane Soda Cherry Vanilla Crème	2.91 (0.01)
Hansen's Cane Soda Kiwi Strawberry	2.59 (0.01)
Hansen's Cane Soda Mandarin Lime	2.57 (0.01)
Hansen's Cane Soda Pomegranate	2.55 (0.00)
Hawaiian Punch (Fruit Juicy Red)	2.87 (0.01)
Jolly Rancher Grapico	2.60 (0.01)
Jolly Rancher Orange	2.88 (0.01)
Jones Blue Bubblegum	2.99 (0.01)
Jones Green Apple Soda	2.65 (0.01)
Jones Mandarin Orange	2.93 (0.00)
Jones M.F. Grape	2.89 (0.02)
Jones Orange & Cream Soda	2.79 (0.01)
Jones Strawberry Lime	2.81 (0.02)
Mr. Pibb Xtra	2.80 (0.01)
Natural Brew Draft Root Beer	2.90 (0.00)
Pepsi	2.39 (0.03)
Pepsi Max	2.74 (0.01)
Pepsi Max Ceasefire	2.70 (0.01)
Pepsi Wild Cherry	2.41 (0.03)
RC Cola	2.32 (0.02)
Schweppes Tonic Water	2.54 (0.03)
Sunkist Orange	2.98 (0.01)
Sunkist Peach	2.89 (0.01)
Sunkist Strawberry	2.99 (0.01)
Tab	2.72 (0.01)
Vault	2.77 (0.02)
Vault Red Blitz	2.80 (0.01)
Vault x	2.89 (0.03)
7UP	3.24 (0.02)

Soda	pH (stand. dev.)
7UP Diet	3.48 (0.00)
A&W Cream Soda	3.86 (0.01)
Ale 8-One	3.13 (0.01)
Boylan's Orange Cream	3.59 (0.01)
Boylan's Orange Soda	3.22 (0.00)
Boylan's Original Birch Beer	3.80 (0.00)
Buffalo Rock Ginger Ale	3.23 (0.01)
Coca-Cola Caffeine Free Diet	3.04 (0.01)
Coca-Cola Diet	3.10 (0.05)
Dr Pepper Cherry	3.06 (0.02)
Dr Pepper Diet	3.20 (0.00)
Dr Pepper Diet Cherry	3.32 (0.01)
Fresca (1 liter)	3.08 (0.01)
Grapico Diet	3.04 (0.01)
Hansen's Cane Soda Black Cherry Diet	3.47 (0.02)
Hansen's Cane Soda Creamy Root Beer Diet	3.73 (0.01)
Izze Sparkling Blackberry	3.28 (0.01)
Izze Sparkling Clementine	3.27 (0.01)
Izze Sparkling Pomegranate	3.01 (0.01)
Jones Cream Soda	3.04 (0.01)
Jones Red Apple	3.40 (0.02)
Jones Root Beer	3.42 (0.02)
Mellow Yellow	3.03 (0.00)
Mountain Dew (regular)	3.22 (0.07)
Mountain Dew Code Red	3.27 (0.01)
Mountain Dew Diet	3.18 (0.01)
Mountain Dew Voltage	3.05 (0.01)
Mug Root Beer	3.88 (0.02)
Pepsi Diet	3.02 (0.01)
Sierra Mist	3.09 (0.02)
Sierra Mist Diet	3.31 (0.01)
Sprite	3.24 (0.05)
Sprite Zero	3.14 (0.01)
Sunkist Diet	3.49 (0.01)
Sunkist Solar Fusion Tropical Mandarin	3.02 (0.01)
Welch's Grape Soda	3.11 (0.02)

Minimally Erosive

Soda	pH (stand. dev.)
A&W Root Beer	4.27 (0.02)
A&W Root Beer Diet	4.57 (0.00)
Barq's Root Beer	4.11 (0.02)
Boylan's Creme Soda	4.17 (0.02)
Boylan's Diet Black Cherry	4.00 (0.01)
Boylan's Diet Root Beer	4.05 (0.02)
Boylan's Root Beer	4.01 (0.01)
Canada Dry Club Soda	5.24 (0.03)
IBC Root Beer	4.10 (0.02)
Maine Root Root Beer	4.06 (0.02)

Reference:

Reddy A, Norris DF, Momeni SS, Waldo B, Ruby JD. The pH of beverages in the United States. J Am Dent Assoc. 2016 Apr;147(4):255-63.

pH TABLE 2

pH of Waters and Sports Drinks

Water and Sports Drinks	pH (stand. dev.)
Activ Water Focus Dragonfruit	2.82 (0.04)
Activ Water Vigor Triple Berry	2.67 (0.01)
Gatorade Frost Riptide Rush	2.99 (0.01)
Gatorade Lemon-Lime	2.97 (0.01)
Gatorade Orange	2.99 (0.00)
Powerade Fruit Punch	2.77 (0.01)
Powerade Grape	2.77 (0.01)
Powerade Lemon Lime	2.75 (0.01)
Powerade Mountain Berry Blast	2.82 (0.01)
Powerade Orange	2.75 (0.02)
Powerade Sour Melon	2.73 (0.00)
Powerade Strawberry Lemonade	2.78 (0.01)
Powerade White Cherry	2.81 (0.01)
Powerade Zero Grape	2.97 (0.01)
Powerade Zero Lemon Lime	2.92 (0.00)
Powerade Zero Mixed Berry	2.93 (0.01)
Powerade Zero Orange	2.93 (0.01)
Activ Water Power Strawberry Kiwi	3.38 (0.03)
Clear American Kiwi Strawberry	3.70 (0.01)
Clear American Pomegranate Blueberry Acai	3.24 (0.01)
Clear American Tropical Fruit	3.07 (0.01)
Clear American White Grape	3.43 (0.01)
Dasani Grape	3.05 (0.01)
Dasani Lemon or Strawberry	3.03 (0.01)
Gatorade Blueberry Pomegranate Low Calorie	3.21 (0.01)
Gatorade Fierce Grape or Melon	3.05 (0.00)
Gatorade Fruit Punch	3.01 (0.01)
Gatorade Rain Berry	3.17 (0.01)
Gatorade Rain Lime	3.19 (0.01)
Gatorade Rain Strawberry Kiwi	3.17 (0.01)
Propel Berry	3.01 (0.00)
Propel Grape	3.10 (0.01)
Propel Kiwi Strawberry	3.17 (0.00)
Propel Lemon	3.03 (0.00)
S. Pellegrino Sparkling Natural Mineral Water	4.96 (0.09)
Skinny Water Acai Grape Blueberry	3.81 (0.02)
Skinny Water Goji Fruit Punch	3.67 (0.01)
Skinny Water Raspberry Pomegranate	3.68 (0.01)
Sobe Life Water Acai Fruit Punch	3.22 (0.01)
Sobe Life Water Blackberry Grape	3.15 (0.01)
Sobe Life Water Cherimoya Punch	3.28 (0.00)
Sobe Life Water Fuji Apple Pear	3.53 (0.01)
Sobe Life Water Mango Melon	3.29 (0.01)
Sobe Life Water Strawberry Dragonfruit	3.32 (0.01)
Vidration Vitamin Enhanced Water Defense Pomegranate-Acai-Blueberry	2.92 (0.01)
Vidration Vitamin Enhanced Water Energy Tropical Citrus	2.91 (0.01)
Vidration Vitamin Enhanced Water Multi-V Lemon Lime	3.59 (0.01)
Vidration Vitamin Enhanced Water Recover Fruit Punch	3.61 (0.01)
Vitamin Water Connect Black Cherry-Lime	2.96 (0.01)
Vitamin Water Dwnld Berry-Cherry	3.04 (0.01)
Vitamin Water Energy Tropical Citrus	3.15 (0.01)
Vitamin Water Essential Orange-Orange	3.23 (0.00)
Vitamin Water Focus Kiwi-Strawberry	3.04 (0.01)
Vitamin Water Multi-V Lemonade	3.19 (0.01)
Vitamin Water Power C Dragonfruit	3.05 (0.00)
Vitamin Water Revive Fruit Punch	3.65 (0.01)
Vitamin Water Spark Grape-Blueberry	3.19 (0.01)
Vitamin Water XXX Acai-Blueberry-Pomegranate	2.98 (0.01)
Vitamin Water Zero Go-Go Mixed Berry	3.08 (0.01)
Vitamin Water Zero Mega C Grape-Raspberry	3.05 (0.00)
Vitamin Water Zero Recoup Peach-Mandarin	3.01 (0.01)
Vitamin Water Zero Rise Orange	3.46 (0.00)
Vitamin Water Zero Squeezed Lemonade	3.19 (0.00)
Vitamin Water Zero XXX Acai-Blueberry-Pomegranate	3.05 (0.01)
Minimally Erosive	
Aquafina regular	6.11 (0.23)
Birmingham, Alabama, municipal water	7.20 (0.05)
Dasani regular	5.03 (0.04)
Pegrier carbonated mineral water	5.25 (0.10)

pH of Energy Drinks

Energy Drinks	pH (stand. dev.)
24:7 Energy Cherry Berry	2.61 (0.01)
180 Blue Orange Citrus Blast	2.82 (0.00)
180 Blue With Acai	2.82 (0.01)
5-Hour Energy Berry	2.81 (0.03)
5-Hour Energy Extra Strength	2.82 (0.00)
5-Hour Energy Lemon-Lime	2.81 (0.00)
Amp Energy Elevate	2.79 (0.01)
Amp Energy Overdrive	2.78 (0.01)
Amp Energy regular	2.81 (0.01)
Amp Energy Sugar Free	2.86 (0.01)
Jolt Blue Bolt	2.96 (0.00)
Jolt Passion Fruit	2.82 (0.01)
Jolt Power Cola	2.47 (0.01)
Meltdown Energy Peach Mango	2.77 (0.00)
No Fear regular	2.97 (0.02)
Orange County Choppers	2.78 (0.02)
Purple Stuff Lean	2.87 (0.01)
Redline Peach Mango	2.74 (0.02)
Redline Princess Exotic Fruit	2.85 (0.01)
Redline Triple Berry	2.77 (0.01)
Rockstar Energy Drink	2.74 (0.01)
Rockstar Punched (Energy + Punch)	2.83 (0.01)
Rockstar Recovery	2.84 (0.01)
Crunk Citrus	3.20 (0.01)
Crunk Energy Drink	3.31 (0.01)
Crunk Grape Acai Energy Drink	3.30 (0.01)
Crunk Low Carb Sugar Free	3.34 (0.00)
Drank	3.09 (0.01)
Fuel Energy Shots Lemon Lime	3.97 (0.01)
Fuel Energy Shots Orange	3.44 (0.01)
Full Throttle Blue Agave	3.10 (0.01)
Full Throttle Citrus	3.09 (0.01)
Full Throttle Red Berry	3.08 (0.01)
Hydrive Blue Raspberry	3.45 (0.01)
Hydrive Citrus Burst	3.03 (0.01)
Hydrive Lemon Lime	3.42 (0.01)
Hydrive Triple Berry	3.15 (0.01)
Jolt Ultra Sugar Free	3.14 (0.00)
Killer Buzz	3.23 (0.01)
Killer Buzz Sugar Free	3.36 (0.00)
Monster Assault	3.58 (0.01)
Monster Energy	3.48 (0.01)
Monster Hitman Energy Shot	3.44 (0.01)
Monster Khao	3.47 (0.01)
Monster Low Carb	3.60 (0.01)
Monster M-80	3.29 (0.00)
Monster MIXXD	3.35 (0.00)
Nitrous Monster Anti-Gravity	3.64 (0.01)
Nitrous Monster Killer B	3.31 (0.00)
Nitrous Monster Super Dry	3.46 (0.00)
No Fear Sugar Free	3.06 (0.01)
NOS Fruit Punch	3.32 (0.00)
NOS Grape	3.27 (0.01)
NOS High Performance Energy Drink	3.31 (0.01)
NOS Power Shot	3.03 (0.02)
Redbull regular	3.43 (0.01)
Redbull Shot	3.25 (0.03)
Redbull Sugar Free	3.39 (0.00)
Redbull Sugar Free Shot	3.28 (0.02)
Redline Xtreme Grape	3.23 (0.01)
Redline Xtreme Triple Berry	3.24 (0.01)
Redline Xtreme Watermelon	3.41 (0.00)
Rhinos Energy Drink	3.51 (0.01)
Rhinos Sugar Free Energy Drink	3.32 (0.01)
Rockstar Energy Cola	3.14 (0.01)
Rockstar Juiced Energy + Guava	3.16 (0.01)
Rockstar Juiced Energy + Juice Mango Orange Passion	3.05 (0.01)
Rockstar Sugar Free	3.15 (0.03)

pH TABLE 3

pH of Fruit Drinks and Fruit Juices

Fruit Drinks	pH (stand. dev.)
Barber's Lemonade	2.69 (0.00)
Barber's Orange Drink	2.96 (0.00)
Bug Juice Berry Raspberry	2.99 (0.01)
Bug Juice Grapey Grape	2.83 (0.00)
Country Time Lemonade	2.72 (0.01)
Crystal Light Fruit Punch	2.96 (0.02)
Crystal Light Raspberry Ice	2.77 (0.01)
Hi-C Tropical	2.81 (0.03)
Kool-Aid Mix Cherry	2.71 (0.00)
Kool-Aid Mix Grape	2.83 (0.01)
Kool-Aid Mix Lemon-Lime	2.73 (0.01)
Kool-Aid Mix Orange	2.77 (0.01)
Kool-Aid Mix Pink Lemonade	2.66 (0.01)
Kool-Aid Mix Tropical Punch	2.69 (0.00)
Minute Maid Fruit Punch	2.86 (0.00)
Minute Maid Lemonade	2.57 (0.01)
Minute Maid Orangeade	2.85 (0.00)
Minute Maid Pink Lemonade	2.59 (0.00)
Simply Lemonade	2.61 (0.01)
Snapple Kiwi Strawberry	2.77 (0.01)
Snapple Mango Madness	2.89 (0.01)
Sobe Black and Blueberry Brew	2.69 (0.00)
Sobe Citrus Energy	2.63 (0.00)
Sobe Power Fruit Punch	2.43 (0.02)
Sobe Strawberry Banana	2.62 (0.01)
Sun Fresh Lemonade	2.68 (0.01)
Sunny D Smooth	2.92 (0.01)
Sunny D Tangy Original	2.86 (0.01)
Tropicana Cranberry Cocktail	2.70 (0.01)
Tropicana Juice Beverage Cranberry	2.59 (0.00)
Tropicana Juice Beverage Grape	2.58 (0.00)
Tropicana Lemonade	2.70 (0.01)
Tropicana Twister Blue Raspberry Rush	2.62 (0.00)
Tropicana Twister Cherry Berry Blast	2.63 (0.00)
Tropicana Twister Orange Strawberry Banana Burst	2.89 (0.01)
Tropicana Twister Strawberry Kiwi Cyclone	2.59 (0.01)
Welch's Blueberry Kiwi Blast	2.57 (0.01)
Welch's Cranberry	2.59 (0.02)
Welch's Grape Juice Cocktail	2.92 (0.01)
Welch's Ruby Red Grapefruit Juice	2.97 (0.01)
Barber's Fruit Punch	2.96 (0.00)
Bug Juice Fruity Punch	3.09 (0.00)
Bug Juice Leapin' Lemonade	3.06 (0.00)
Bug Juice Whistlin' Watermelon	3.40 (0.01)
CapriSun Surfer Cooler	3.08 (0.00)
Crystal Light Green Tea Raspberry Mix	3.11 (0.02)
Fuze Banana Colada	3.45 (0.03)
Fuze Blueberry Raspberry	3.20 (0.01)
Fuze Green Tea Honey and Ginseng	3.28 (0.02)
Fuze Orange Mango	3.34 (0.02)
Fuze Peach Mango	3.53 (0.01)
Fuze Strawberry Banana	3.54 (0.01)
Fuze Strawberry Guava	3.55 (0.02)
Fuze Strawberry Melon	3.18 (0.01)
Fuze Tropical Punch	3.17 (0.01)
Jumex Guava	3.38 (0.02)
Jumex Mango	3.41 (0.01)
Jumex Peach	3.33 (0.02)
Jumex Strawberry Banana	3.68 (0.01)
Kool-Aid Burst (Tropical)	3.07 (0.01)
Little Hug Grape	3.09 (0.01)
Little Hug Orange	3.00 (0.01)
Mondo (Legendary Berry)	3.07 (0.01)
Mondo (Primo Punch)	3.10 (0.01)
Sesame Street Elmo's Punch	3.87 (0.01)
Sobe Fuji Apple Cranberry (low calorie)	3.16 (0.01)
Sobe Orange Carrot	3.34 (0.00)
Sobe Pina Colada	3.25 (0.01)
TurnE Yummies Fruitabulous Punch	3.35 (0.00)
TurnE Yummies Orangearific	3.34 (0.01)
TurnE Yummies Soursational Raspberry	3.18 (0.00)
TurnE Yummies Very Berry Blue	3.33 (0.00)
Vitamin Stix Dragonfruit Acai	3.11 (0.01)
Vitamin Stix Passionfruit Citrus	3.19 (0.01)
Vitamin Stix Strawberry Kiwi	3.06 (0.01)
Welch's Orange Pineapple	3.20 (0.01)
Welch's Strawberry Kiwi	3.03 (0.01)

Fruit Juices	pH (stand. dev.)
Lemon Juice	2.25 (0.01)
Minute Maid Cranberry Apple Raspberry	2.79 (0.01)
Minute Maid Cranberry Grape	2.71 (0.01)
Ocean Spray Cranberry	2.56 (0.00)
Ocean Spray Cran-Grape	2.79 (0.01)
Ocean Spray Cran-Pomegranate	2.72 (0.01)
Ocean Spray Strawberry Kiwi Juice Cocktail	2.90 (0.01)
V8 Splash Berry Blend	2.94 (0.01)
V8 Splash Strawberry Kiwi	2.99 (0.01)
V8 Splash Tropical Blend	2.93 (0.00)
Amp Energy Juice Mixed Berry	3.62 (0.01)
Amp Energy Juice Orange	3.60 (0.01)
Barber's Orange Juice	3.81 (0.01)
Dole Pineapple Juice	3.40 (0.01)
Juicy Juice Apple	3.64 (0.01)
Juicy Juice Berry	3.78 (0.01)
Juicy Juice Sparkling Apple	3.47 (0.01)
Juicy Juice Sparkling Berry	3.50 (0.01)
Juicy Juice Sparkling Orange	3.49 (0.01)
Minute Maid Apple Juice	3.66 (0.01)
Minute Maid Natural Energy Mango Tropical	3.34 (0.02)
Minute Maid Natural Energy Pomegranate Berry	3.33 (0.01)
Minute Maid Natural Energy Strawberry Kiwi	3.40 (0.01)
Minute Maid Orange Juice	3.82 (0.01)
Minute Maid Pineapple Orange	3.71 (0.01)
Minute Maid Ruby Red Grapefruit Juice	3.07 (0.03)
Naked Blue Machine	3.81 (0.01)
Naked Orange Mango	3.75 (0.01)
Ocean Spray Orange Juice	3.83 (0.01)
Ocean Spray Pineapple Peach Mango Juice Blend	3.64 (0.01)
Ocean Spray Ruby Red	3.07 (0.01)
Simply Apple	3.67 (0.01)
Simply Orange Orange Juice	3.78 (0.00)
Tango Energy Juice	3.47 (0.00)
Tropicana 100% Juice Apple Juice	3.50 (0.02)
Tropicana 100% Juice Orange Juice	3.80 (0.01)
Tropicana Apple Orchard Style Juice	3.57 (0.00)
Tropicana Grape Juice	3.29 (0.01)
V8 Fusion Cranberry Blackberry	3.56 (0.01)
V8 Fusion Pomegranate Blueberry	3.66 (0.00)
V8 Fusion Strawberry Banana	3.66 (0.00)
Very Fine Grapefruit Juice	3.22 (0.03)
Welch's 100% Grape Juice	3.38 (0.00)
Welch's Apple Juice	3.57 (0.01)
Welch's Orange Juice	3.73 (0.00)
Minimally Erosive	
Campbell's Tomato Juice	4.01 (0.01)
Naked Protein Zone	4.69 (0.01)
Tropicana Orange Juice (With Calcium)	4.09 (0.01)
V8 Vegetable Juice	4.23 (0.01)
V8 Vegetable Juice Low Sodium	4.17 (0.01)
V8 Vegetable Juice Spicy Hot	4.19 (0.00)

TABLE 4

pH of Teas and Coffee

Teas and Coffee	pH (stand. dev.)
Admiral Iced Tea Raspberry	2.94 (0.00)
Arizona Iced Tea	2.85 (0.03)
Lipton Green Tea With Citrus	2.93 (0.00)
Lipton Green Tea With Citrus Diet	2.92 (0.00)
Nestea Iced Tea With Natural Lemon Flavor	2.94 (0.01)
Nestea Red Tea Pomegranate and Passion Fruit	2.87 (0.01)
Snapple Peach Tea	2.94 (0.01)
Snapple Raspberry Tea	2.92 (0.00)
Admiral Iced Tea Green Tea	3.72 (0.01)
Admiral Iced Tea Mango	3.41 (0.00)
Admiral Iced Tea Sweet Tea	3.76 (0.01)
Arizona Diet Green Tea + Ginseng	3.29 (0.01)
Snapple Diet Raspberry Tea	3.39 (0.02)
Snapple Diet Peach Tea	3.32 (0.01)
Minimally Erosive	
Milo's Famous Sweet Tea	4.66 (0.02)
Milo's No Calorie Famous Sweet Tea	5.18 (0.03)
Red Diamond Tea Fresh Brewed Sweet Tea	5.04 (0.02)
Starbucks Medium Roast	5.11 (0.05)