

Relieving Dry Mouth: Varying Levels of pH Found in Bottled Water

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Abstract

It is estimated that 30% of people older than 60 years suffer from hyposalivation or dry mouth. Drinking water frequently has been recommended as a safe, non-pharmacologic way to combat hyposalivation. The saliva in patients with dry mouth is acidic. Beverages consumed daily may have an erosive potential on teeth. The pH and the mineral content of the beverage determine its erosive potential. An acidic beverage, therefore, may have harmful effects on mineralized tooth structures, causing erosion of enamel, dentin, and cementum. Because bottled water is both convenient and easily available, the authors tested the pH of eight common brands of bottled water. (One brand included two different bottle types, for a total of nine bottled waters tested.) To standardize the pH electrode, pH buffers of 4.7 and 10 were used. The pH was measured using the Denver Instruments basic pH meter. Six recordings were used for each brand and then averaged to report the pH. Two of the bottled water samples tested were below the critical level of 5.2 pH to 5.5 pH, the level at which erosion of enamel occurs. Six of the samples tested were below the critical pH of 6.8, at which erosion of root dentin occurs. The authors conclude that both patients and clinicians incorrectly presume bottled water to be innocuous. Clinicians should be cognizant of the erosive potential of different brands of bottled water to both educate patients and recommend water with neutral or alkaline pH for patients with symptoms of dry mouth to prevent further deterioration and demineralization of tooth structure.

This article can be found in its entirety at this website:

<https://www.aegisdentalnetwork.com/cced/2017/07/relieving-dry-mouth-varying-levels-of-ph-found-in-bottled-water>

TABLE 1

Associated Average pH Range and Source Location for Bottled Waters Tested

Brand	pH	Source of Bottling (where known)*
Alkalife Ten Spring Water	9.78	Blue Springs, Hamilton, GA; and Alton, VA
Dasani	4.71	—
Deer Park 100% Natural Spring Water	4.89	White Springs, Liberty County, FL; Blue Spring, Madison County, FL; and/or Cypress Spring, Washington County, FL
Great Value Purified Drinking Water	6.04	Municipal supply, Riverside, MO
Kroger Purified Drinking Water	5.38	—
Rite Aid Pantry Crystal Lake (screw cap)	5.63	Protected springs in Roaring Gap, NC; Alton, VA; and Blue Ridge, GA
Rite Aid Pantry Crystal Lake (squirt bottle)	7.65	Nantze Springs, Arlington, GA
Sam's Choice Purified Drinking Water	5.98	—
Southern Home Spring Water	7.82	Emerald Spring, Abbeville, GA

*All of the companies were contacted about the source location of the water; however, some were hesitant to provide information. If the location is not reported, the water was purified via reverse osmosis or through other purification methods. The source is regional and dependent on purchase location. Statistical outliers determined through Gaussian statistics of each bottle were excluded in the calculation of average pH. Also, companies were contacted for more information on the source location and pH, but little to no information was provided.