

Too much bottled water might harm kids' teeth

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As Americans rely less on tap water, lack of fluoride could be a concern, experts say.

(HealthDay) -- On grocery store shelves and kitchen counters alike, bottled water has become a staple of the American dietary landscape.

But, some experts say it may contribute to diminished dental health.

While most bottled water manufacturers declare that their products are 100 percent "pure," "clean" or "natural," few brands contain one ingredient that most Americans take for granted: fluoride.

A salt formed from the combination of fluorine and soil and rock minerals, fluoride is voluntarily added by the vast majority of states and/or local municipalities (rather than the U.S. [Environmental Protection Agency](#)), to public water supplies across the United States.

The goal: to help reduce the risk for dental cavities.

When it comes to bottled water, the decision to add or not to add fluoride is left entirely up to individual manufacturers. Most do not.

And with Americans now consuming about 8.4 billion gallons of bottled water each year, according to the Beverage Marketing Corp., some experts say that turning away from tap water means more

cavities and worse [dental hygiene](#).

Concern are most acute when it comes to children.

Dr. Burton Edelstein, president of the Children's Dental Health Project in Washington, D.C., and a professor of dentistry and of health policy and management at Columbia University in New York City, describes the increasing prevalence of [tooth decay](#) among young children as "alarming."

"[Today] one in 10 2-year olds, one in five 3-year olds, one in three 4-year olds and approaching half of 5-year-olds have visually evident tooth decay experience," he said, adding that "the consequences in terms of pain, infection, dysfunction and unmet treatment need are significant."

But where does bottled water fit in, if at all?

In 2009, an Eastern Virginia Medical School study published in the journal [Pediatric Dentistry](#) found that nearly 70 percent of parents surveyed said that they gave their children bottled water to drink, either exclusively or alongside tap water.

Parents cited bottle waters' convenience; a preference for its taste and smell; and a fear of tap water contamination.

Nearly two-thirds of parents said that they had no idea whether or not the bottled water they gave their children contained any amount of fluoride.

Dr. Jonathan Shenkin, an American Dental Association spokesman and Augusta, Maine-based pediatric dentist, said that consumers would have a hard time finding out if a product contained fluoride, and even if it did, whether the amount was significant.

"Available studies show that most bottled waters have less than 0.3 ppm [parts per million] of

fluoride, well below the accepted level for optimally fluoridated drinking water," he said. "There are no [U.S.] Food and Drug Administration requirements that the amount of fluoride be labeled on bottled water unless it has been added during processing. This leaves consumers in the dark about the fluoride content of the bottled water they consume."

But the connection between bottled water and dental health is just a suspicion, with no scientific proof.

Shenkin acknowledged that "there has been no research to show using bottled water causes tooth decay." At the same time, he cautioned that fluoridated tap water is now believed by experts to reduce the risk of tooth decay by about 25 percent, and that no research has effectively *discounted* the possible connection between non-fluoridated bottled water consumption and a rise in tooth decay risk.

Indeed, Shenkin offered a "reminder that the U.S. Centers for Disease Control [and Prevention] listed water fluoridation as one of the 10 great public health achievements of the 20th century."

Edelstein seconded the notion that fluoride is an important tool in the fight against tooth decay.

"Fluoride -- no matter how it gets to the tooth surfaces -- toothpaste, water, rinses, varnishes, gels, is effective in a multitude of ways," he said. "It strengthens the tooth structure while also inhibiting the bacteria's capacity to produce acids from sugars. It is most effective when delivered multiple times throughout the day, by using fluoridated toothpastes twice daily and by drinking fluoridated water."

Edelstein noted that "the advantage of water is that it is consumed multiple times a day," adding that tap water is both convenient and free.

"[But] when bottled water without fluoride is substituted for fluoridated tap water, the advantage of regular, small amounts of healing fluoride is lost and children and adults will be more prone to cavity activity on the surfaces of their teeth," he warned.

That said, Edelstein -- like Shenkin -- also noted that no studies have as yet directly linked a higher risk for cavities to the consumption of bottled water in place of [tap water](#).

"Some have attributed this increase and prevalence to bottled water substitution," he said. "But that remains conjecture as other factors -- increased sugar in diets, changes in demography, dental intervention -- may account for the change."

In a news release issued in March, the International Bottled Water Association (IBWA) denied that bottled-water consumption is associated with an increased risk for tooth decay.

"There is absolutely no correlation between consumption of bottled water and an increase in cavities," the IBWA stated. "In fact, bottled water does not contain ingredients that cause cavities, such as sugar." The organization also noted that about 20 of its member manufacturers actually produce "clearly labeled" fluoridated [bottled water](#).

"Consumers," the IBWA added, "should therefore look at how much fluoride they are receiving as part of an overall diet and should contact their health-care provider or dental-care provider for their recommendation."

More information: For more on fluoride and tap water, visit the [U.S. Environmental Protection Agency](#).

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