



May 26, 2016

Madeline Drexler
Editor, *Harvard School of Public Health Magazine*
Harvard T.H. Chan School of Public Health
Office for External Relations
90 Smith Street, Fourth Floor
Boston, MA 02120

Dear Ms. Drexler:

On behalf of the American Association of Public Health Dentistry (AAPHD), the American Public Health Association (APHA), and the Harvard School of Dental Medicine, we are requesting that the article titled "*Is Fluoridated Water Safe?*"¹ published in the Spring 2016 issue of Harvard T. H. Chan School of Public Health's "*Harvard Public Health*" magazine be rescinded. This article misrepresents the current state of the science of community water fluoridation (CWF), and does not provide a fair and balanced perspective. Some of our specific concerns are detailed below.

- The magazine article references the current water fluoride recommendation made by the U.S. Public Health Service, but does not state the actual recommended level (0.7 parts per million [ppm]).² Additionally, the article incorrectly states that the recommended level was "lowered" and does not provide the scientific rationale for why the recommended level was revised. Prior to 2015, the USPHS recommended a range of fluoride between 0.7 and 1.2 ppm, dependent on the average annual temperature. The reason for the range was based on differences in water consumption between warmer and cooler climates. Due to wide-spread use of air conditioning, water consumption currently is rather consistent in all areas of the country.³ Data from the 1986-87 National Survey of Oral Health of US School Children, conducted at a time of wide-spread use of toothpaste with fluoride, concluded that "a suitable trade-off between caries and fluorosis appears to occur around 0.7 ppm."⁴ Thus, the recommended level of fluoride for the entire US has been narrowed to what had been the lower end of the range, 0.7 ppm. Of note, the lower threshold has *not* changed.
- The magazine article refers to the Cochrane systematic review⁵ as a "damning analysis" of CWF. This is a sensationalistic overstatement of the results from the Cochrane Review, as the review found that initiation of CWF reduces the number of decayed, missing and filled primary teeth (dmft) by 35%, reduces the number of decayed, missing and filled permanent teeth (DMFT) by 26%, and increases in the percentage of caries-free children by 15%.
- The magazine article does not provide a balanced view of the evidence by omitting the results of other similar systematic reviews, including:

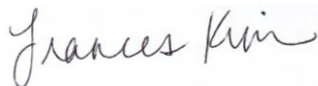
- A 2016 systematic review on the results of terminating CWF, which includes data as recent as 2003, that concludes there is an increase in dental caries when CWF is ceased.⁶
 - A 2016 systematic review of the economic analysis that concludes CWF continues to be a cost-effective public health measure, with a per capita annual benefit ranging from \$5.49 to \$93.19.⁷
 - A 2000 systematic review that concludes CWF was associated with a 14.6% increased proportion of children without caries and a reduction in the number of teeth affected by caries.^{8,9}
 - The 2013 US Community Preventive Services Task Force systematic review that recommends CWF “based on strong evidence of effectiveness in reducing dental caries (tooth decay) across populations. Evidence shows the prevalence of caries is substantially lower in communities with CWF.”¹⁰
- The primary reason for the difference in the robustness of the results from the Cochrane review, compared to the other systematic reviews, is that the Cochrane limited their selection of studies evaluating disparities to only those that included concurrent control, and as such had a more limited range of studies to consider. Nevertheless, the overall evidence among *all* of these systematic reviews is the same: *CWF is an effective public health strategy to prevent the burden of dental caries in a population.*
 - The magazine article states that CWF “does not appear to have any benefits in adults” based on the results of the Cochrane systematic review. However, the Cochrane review did *not* make this conclusion. Rather, the review specifically states “We did not identify any evidence, meeting the review’s inclusion criteria, to determine the effectiveness of water fluoridation for preventing caries in adults.”⁵ Due to the lack of studies that met the inclusion criteria, the Cochrane authors were not able to make *any* conclusion on the effect of CWF on adults. In fact, there are studies that were not included in the Cochrane review that demonstrate a caries preventive benefit of CWF in adults.¹¹⁻¹⁴
 - The magazine article states that use of fluoride toothpaste and supplements “may explain why countries that do not fluoridate their water have also seen big drops in cavity rates,” and has a corresponding graph with data from supposedly fluoridated and non-fluoridated countries. However, some of the countries in the “without fluoridated water” graph do in fact have CWF (i.e. Australia, Canada, and Chile),^{15, 16} and some of the other countries in the same graph have water supplies with fluoride naturally occurring at optimal levels (i.e. Sweden and Finland).¹⁶ Furthermore, there may be significant cultural differences, including diets that are lower in fermentable carbohydrates and universal access to preventive dental care, among these countries that may also account for differences in caries rates. Many of these countries use fluoridated salt or milk, and are unable to provide CWF due to lack of infrastructure or funds. Additionally, fluoride supplements are recommended for areas that do not have optimal levels of fluoride in their water supplies, however compliance challenges prevent this strategy from being an effective public health measure.¹⁷ While the benefits of fluoride toothpaste are clear, to imply that toothpaste may eliminate the need for CWF is extrapolation beyond what the data suggests.
 - The magazine article states that “fluoride itself may be dangerous at high levels” and goes on to state that “high levels of fluoride may be toxic to brain and nerve cells” and that “human epidemiological studies have identified possible links to learning, memory, and cognition deficits” at levels higher than those typically provided by CWF. The article fails to mention that *no adverse health effects have been identified at levels recommended for CWF (0.7 ppm)*. The only risk for an adverse effect identified by the IOM at levels recommended for CWF is enamel fluorosis, and this is categorized as a cosmetic effect, not a health effect.¹⁸

Despite the wide-spread availability of fluoride toothpaste, dental caries remains a significant public health problem. Forty-one percent of children aged 2-11 years have dental caries in their primary teeth, 42% of children and adolescents aged 6-19 years and approximately 90% of adults have dental caries in their permanent teeth, and 8% of adults are edentulous.¹⁹ Disparities in dental caries prevalence exist across all age groups, racial/ethnic groups, and persons with lower education and income.¹⁹ The negative impacts of dental caries are substantial, and can include problems with speech, eating, diet and nutrition, self-esteem, social interaction, education, career achievement, school performance, psychological status, and diminished quality of life.²⁰ Untreated tooth decay can result in death.²¹

Because of the robust body of scientific evidence to support both the safety and effectiveness of optimal levels of fluoride in water, the CDC acknowledges Community Water Fluoridation as one of the top 10 public health achievements.²² The beauty of community water fluoridation is that it is a scientifically-proven cost-effective strategy to improve the health of everyone on the water supply, regardless of social status or access to care, and thus is able to provide a significant health benefit to the country's most vulnerable populations.

Based on the *significant flaws* in the magazine article, we respectfully request that the article be rescinded, and a correction be published to clarify any misleading information that was provided. We welcome any continued dialogue regarding this matter, and are happy to address any questions you may have on the robust body of evidence supporting the safety and effectiveness of Community Water Fluoridation. Questions or comments may be directed to Dr. Julie Frantsve-Hawley, Executive Director of the American Association of Public Health Dentistry at jhawley@aaphd.org or 847-999-4738.

Sincerely,



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