



May 15, 2012

The Honorable Barbara Boxer  
United States Senator  
70 Washington Street, Suite 203  
Oakland, California 94607

Attn: Kathleen Brennan

Dear Senator Boxer:

Thank you for your inquiry on behalf of your constituent, Mr. Doug Cragoe, regarding potential benefits and adverse health effects related to fluoride intake in infants 0 to 6 months of age.

In January 2011, the Department of Health and Human Services (HHS) and the United States Environmental Protection Agency (EPA) announced important actions to ensure that recommendations and standards on fluoride in drinking water continue to provide the health benefits of water fluoridation while lessening the chance that children are taking in too much fluoride. Both actions are based on recent HHS and EPA scientific assessments and a shared understanding of the latest science by HHS and EPA investigators. These actions do not change the longstanding consensus among panels of experts from different health and scientific fields that have provided strong evidence that water fluoridation is safe and effective.

Based on the most up-to-date available evidence, HHS has proposed to modify the recommended level of fluoride in drinking water. In a Federal Register Notice issued January 13, 2011, HHS sought public comments on a proposal that community water systems adjust the amount of fluoride to 0.7 mg/L. This new proposed guidance, which is advisory rather than regulatory, would update and replace the current recommended range of 0.7 to 1.2 mg/L. The proposed recommendation is intended to provide the best balance of protection from dental caries while limiting the risk of dental fluorosis.

The public comment period for the HHS announcement ended on April 15, 2011. HHS is currently reviewing the proposed guidance in light of the public comments and will soon submit the guidance document to an external scientific review panel. In the coming months, HHS expects to incorporate the external review panel's input and issue final non-regulatory guidance.

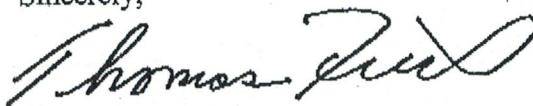
At the same time, EPA announced that it would initiate a review of the maximum amount of naturally occurring fluoride allowed in drinking water, a level set to prevent adverse health effects. Currently, the maximum amount of fluoride allowed in public drinking water is 4 mg/L.

For more information on this review, please visit the EPA website at [http://water.epa.gov/action/advisories/drinking/fluoride\\_index.cfm](http://water.epa.gov/action/advisories/drinking/fluoride_index.cfm).

EPA also has a secondary standard for fluoride in public drinking water of 2.0 mg/L to reduce the chance of dental fluorosis in its moderate and severe forms. A secondary standard is a non-enforceable guideline. Although water systems are not required to comply with secondary standards, for fluoride, EPA does require that water systems notify customers if the fluoride concentrations exceed the secondary standard. In areas where community water systems contain more than 2 ppm fluoride, but less than 4 ppm fluoride, EPA requires that each household be notified annually of the desirability of using an alternative water source for children less than 9 years old. Parents of children with developing teeth are strongly encouraged to use an alternative source of water if their water system contains 2 ppm fluoride or greater.

We have enclosed information addressing the specific questions posed by Mr. Cragoe. Thank you again for your interest in this matter. I hope this information is helpful to you and your constituent.

Sincerely,



Thomas R. Frieden, M.D., M.P.H.  
Director, CDC

Enclosure

## Answers to Mr. Cragoe's Specific Questions

1. *Since .01 mg/d is the optimal amount of total dietary fluoride intake for infants 0 to 6 months of age, would an infant with a much larger daily fluoride intake be expected to have additional protection against tooth decay?*
2. *Would infants 0 to 6 months of age with a much larger daily fluoride intake be expected to have less tooth decay than infants who got the optimal amount of fluoride intake?*
3. *For the 0 to 6 month age group only, if additional fluoride intake above the optimal amount provides additional protection against tooth decay, how much less tooth decay would be expected for these infants?*

The Institute of Medicine (IOM) has concluded that fluoride intake from human milk (0.01 mg/d) is adequate for infants aged 0–6 months because risk of tooth decay does not appear to be significantly increased.<sup>1</sup> We are unaware of data that directly answers your questions about the additional protection from tooth decay that could result from greater daily fluoride intake by infants, 0–6 months of age.

4. *If infants 0 to 6 months of age exceed the tolerable upper intake level of .7 mg/day, what are the adverse health effects that might be expected for these infants?*

The IOM established the tolerable upper limit to reduce risk of moderate and severe dental fluorosis, which generally present with aesthetically objectionable changes in tooth color when the permanent teeth erupt beginning at age six years. Severe forms include pitting of the tooth surface. The IOM also noted that the developing enamel of the permanent teeth in children older than 6 months of age—for example, in the second and third year of life—is probably most susceptible to fluorosis. Among adolescents 12–15 years in the United States, the prevalence of moderate and severe dental fluorosis in the permanent teeth, combined, is 3.6 percent. The prevalence of the severe form alone could not be estimated because there were so few cases [www.cdc.gov/nchs/data/databriefs/db53.htm](http://www.cdc.gov/nchs/data/databriefs/db53.htm). The severe form is rare in the United States, especially in communities where the level of fluoride in water is less than 2 mg per liter.

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<sup>1</sup> Institute of Medicine, Standing Committee on the Scientific Evaluation of Dietary Reference Intakes. DRI, dietary reference intakes: for calcium, phosphorus, magnesium, vitamin D, and fluoride. Washington, DC: National Academy Press, 1997.