United States
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EPA FACT SHEET

FLUORIDE IN DRINKING WATER

Fluoride occurs naturally in water. It is also added to drinking water to reduce tooth decay. State agencies or local public water supply authorities make the decision as to whether or not to add fluoride to specific drinking water supplies.

Drinking Water Standards

Fluoride in drinking water is regulated under Section 1412 of the Safe Drinking Water Act (SDWA). When regulating a contaminant under this Act, EPA promulgates both a Maximum Contaminant Level Goal (MCLG, a nonenforceable health goal), and a Maximum Contaminant Level (MCL, which is a federally enforceable standard). The MCL is set as close to the MCLG as technically feasible taking costs and other factors into consideration. When establishing an MCLG, the Act requires EPA to protect against adverse health effects with a margin of safety. The SDWA leaves the question of what constitutes an adverse health effect to EPA.

EPA may also promulgate nonenforceable secondary standards which are designed to protect the public welfare. Secondary standards are usually based on aesthetic considerations such as taste or odor.

Fluoride Standards

In 1986, EPA promulgated both the fluoride MCLG and MCL at 4 mg/l. This level protects humans from crippling skeletal fluorosis, an adverse health effect.

At the same time, EPA also set a nonenforceable Secondary Maximum Contaminant Level of 2 mg/l for fluoride in drinking water to protect against objectionable dental fluorosis (i.e., a staining and/or pitting of the teeth). While community water systems are not required to reduce the level of fluoride if it exceeds 2 mg/l, they are required to distribute a public notice which advises that children are likely to develop objectionable dental fluorosis. In developing the MCL and the MCLG at 4 mg/l (vs. 2 mg/l to protect against dental fluorosis), EPA concluded that dental fluorosis is a cosmetic effect and not an adverse health effect.

Fluoride Review

In 1992, as part of an ongoing review of fluoride, EPA requested the National Academy of Sciences (NAS) to review fluoride toxicity and exposure data. In addition, EPA signed a consent decree in 1992 with Citizens Interested in Bull Run, Inc. concerning a review of the fluoride standard.

The National Academy of Sciences completed the fluoride review in August 1993. Among other points, they concluded that:

- The current 4 mg/l MCLG and MCL is appropriate as an interim standard pending receipt of additional data, and
- The question of whether dental fluorosis is an adverse effect is a decision for regulatory agencies.

Findings and Conclusions

Based on the NAS review and other studies, there are no data available at this time to conclude that the fluoride drinking water standards should be revised.

EPA has requested that the U.S. Department of Health and Human Services address whether dental fluorosis should be considered an adverse health effect or a cosmetic effect which may impact the MCLG and MCL standards. EPA has also asked the U. S. Department of Health and Human Services to explore ways to reduce fluoride exposure when it exceeds beneficial levels.