European Food Safety Authority's analysis enhances confidence in water fluoridation

A statement by the British Fluoridation Society and the American Fluoridation Society

This summer, the European Food Safety Authority (EFSA) updated its intake levels for fluoride. The assessment of EFSA's new levels strengthens confidence in the safety of fluoridated drinking water, reinforcing the recent decision in England to expand its fluoridation schemes to reach an additional 1.6 million people in the North East region.

Fluoride is a mineral found naturally in lakes, rivers and groundwater, but the level is usually insufficient to prevent decay. Many communities in Brazil, Canada, England, Ireland, Spain, and the United States add more fluoride to their drinking water to reach the optimal level for reducing decay.

EFSA set a safe level of intake of 3.3 mg/day for pregnant women and all age groups over 8 years of age. After assessing its updated levels, EFSA reported that fluoride exposure in drinking water at currently recommended levels "does not pose a health concern" because fluoride levels do not exceed the Authority's new upper intake levels for adults and teenagers.

EFSA explained that for children ages 4-8, the consumption of fluoride in drinking water could increase the likelihood of mild forms of dental fluorosis. Mild fluorosis can lead to faint white markings on the tooth enamel, but it does not negatively affect the health or function of the teeth. As EFSA observed, fluorosis is "unlikely to occur if children spit the toothpaste out properly after brushing their teeth". This reflects that swallowing excessive amounts of fluoride toothpaste at a young age is the greater concern when it comes to dental fluorosis.

Opponents of water fluoridation have voiced concern about cognitive effects that fluoride might have on young children. However, EFSA noted that studies reporting these cognitive effects typically had fluoride levels that exceeded 1.5 milligrams per litre (mg/L). This is the legal limit in the European Union and reflects longstanding WHO guidance. The level of 1.5 mg/L is much greater than the concentration used for water fluoridation but it is worth reflecting that in many areas of the world, including parts of Europe, drinking water may naturally contain higher levels of fluoride than would be seen in a fluoridation scheme.

Research from Australia, Denmark, New Zealand, Spain and Sweden shows no link between fluoridated water and cognitive deficits. The New Zealand study is the only published fluoride study that tested IQs several times during each person's childhood and adulthood.

Thorhallur Halldorsson, Vice-Chair of the EFSA's Scientific Committee, said the updated intake levels for fluoride are "also protective of other potential adverse effects on bones and the thyroid."

Opponents of fluoridation claim that water fluoridation is rendered unnecessary because of the availability of fluoride toothpaste and other topical forms. Yet research in Australia confirmed the importance of both pre-eruptive and post-eruptive exposure to fluoridated water. After the Canadian city of Calgary ended water fluoridation in 2011, its residents had to rely on fluoride toothpaste and other topical forms of fluoride. The city council reversed its decision and resumed fluoridation after observing a significant rise in tooth decay rates.

Tooth decay remains a major public health problem and community water fluoridation is a safe and effective way to reduce the burden of disease in populations served by this important public health measure.

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