

Top science magazine zeroes in on fluoride

NEW YORK — Fluoride's impact on human health and its use in drinking water to fight dental cavities receives a thorough analysis in a feature article in the January issue of [Scientific American](#) magazine.

Author Dan Fagin, a former *Newsday* science writer and now an associate professor of journalism at New York University, cites a number of studies and experts to look at the question of whether some people (especially children) ingest too much fluoride, creating a risk of the tooth-bone condition known as dental fluorosis, or whether that risk is outweighed by fluoride's ability to fight tooth decay when added to public drinking water.

He notes that most fluoride researchers still support water fluoridation as a proven method of preventing tooth decay, especially in places where oral hygiene is poor. However, these researchers also say the case for water fluoridation may not be as strong in communities with good dental care because people already ingest fluoride from a wide range of common foods and beverages, and may be getting too much in some cases.

"Instead of just pushing for more fluoride, we need to find the right balance," Steven M. Levy, director of the Iowa Fluoride Study at the University of Iowa College of Dentistry, is quoted in the article as saying.

Fagin observes of the work of Levy and others: "It is a maddeningly complex area of research because diets, toothbrushing habits and water fluoridation levels vary so much and also because genetic, environmental and even cultural factors appear to leave some people much more susceptible to the effects of fluoride — both positive and negative — than others."

The article reviews the history of fluoridation, starting with Colorado dentist Frederick McKay's pioneering research in the 1930s, through the promotion of fluoridated toothpastes in the 1950s, and down to the present day, including the 2006 findings of a committee of the National Research Council (NRC), which, as Fagin notes, "gave a tinge of legitimacy to some longtime assertions made by antifluoridation campaigners." The NRC committee urged that the US Environmental Protection Agency reduce its current maximum limit for fluoride in drinking water, which is 4 parts per million (ppm).

Fagin also explains the chemistry of how fluoridation fights tooth decay and/or harms bone and teeth, and reports on fluoride levels in some foods and beverages. The Iowa study found, for instance, that brewed black tea contains 3.73 ppm of fluoride and apple-flavored juice drink contains 1.09 ppm.

The current recommended fluoride concentration for public tap water is a range of 0.7 to 1.2 ppm.