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Journal of Evidence-Based Complementary & Alternative Medicine 2012 17: 140
DOI: 10.1177/2156587212437791

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>> Version of Record - Mar 22, 2012

What is This?
Paul Connett, James Beck, and H. S. Micklem

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DOI: 10.1177/2156587212437791

In 1999, the US Public Health Service declared that fluoridation of drinking water is one of the “10 public health achievements” of the 20th century.1,2 But is it? Paul Connett, James Beck, and H. S. Micklem do not believe so, and they are among an increasingly vocal group that is expressing their concerns. There is little question that topical application of fluoride to the teeth has an effect to reduce the incidence of dental caries and improve oral health.3,4 However, critics (such as the authors of this book) question whether it is appropriate to produce this local oral benefit by administering fluoride to the whole body through the drinking water supply. This book is their comprehensive look at the evidence against water fluoridation. The authors begin their case in the somewhat sensationalist book title and then in an early chapter describe that the chemical used to fluoridate most water supplies in the United States is hexafluorosilicic acid, a toxic by-product of the phosphate fertilizer industry. In a subsequent chapter, the authors label the endorsement of water fluoridation in 1950 by the US Public Health Service, the American Association of Public Health Dentists, the American Dental Association, and the American Public Health Association as the “Great Fluoridation Gamble.” Their well-referenced description of the questionable science and the disgraceful political maneuvering that led to these decisions should send chills down the spine of modern ethical researchers. The authors also devote a number of pages to describing the concept of daily fluoride dosage and cumulative dosage in relation to the concentration of fluoride in the water in parts per million (ppm). This will be an eye-opener for many, since the actual daily dosage of fluoride in young children seems rather high. To back up their various arguments, the book has more than 80 pages of references and endnotes.

A major part of this book is devoted to describing the variety of adverse systemic effects of fluoride that have been reported. As a neuroscientist, my interest was piqued by their discussion for brain injury) in children exposed to silicofluoride-treated water supplies.5 However, for someone whose research has involved Alzheimer’s disease,6,7 I was particularly intrigued by their mentioning animal studies showing evidence for fluoride enhancement of the formation of β-amyloid deposits in the brain. Scientists have long been concerned with the increasing incidence of Alzheimer’s disease over the past half-century, for which many generally unsatisfactory explanations have been offered. As early as the 1980s, aluminum exposure was implicated, but following the molecular biology revolution and discovery of genetic defects associated with Alzheimer’s disease, the idea of aluminum involvement in the pathogenesis lost traction. However, the possibility of a fluoride/aluminum interaction triggering events leading to β-amyloid deposition as described in one of the references they cite8 (as well as other references9,10 they did not mention) makes it important to rethink the issue. Some of the other health concerns raised in this text relate to the endocrine system (including thyroid problems) and to cancer.

Considering the current regulatory climate of the US Environmental Protection Agency and of the Food and Drug Administration, it is clear that the shoddy science used to justify water fluoridation in the 1950s would not pass scrutiny in the 21st century. Does that mean that water fluoridation as now practiced is unsafe? The authors of this text provide a well-documented argument that the answer should be “yes.” However, they are no more unbiased than are the proponents of fluoridation. Also, one has to add political maneuvering into the equation. Nonetheless, this text does raise enough questions about water fluoridation to indicate that the US public deserves a truly unbiased scientific analysis of the risks and benefits of water fluoridation programs (as has been suggested in the recent US National Research Council report11).

References
8. Varner JA, Jensen KF, Horvath W, Isaacson RL. Chronic administration of aluminum-fluoride or sodium-fluoride to rats in...

