

Fluoride: Panacea or Poison?

by E. Griffin Cole, DDS

Throughout my dental studies and practice, I've examined numerous patients whose mouths have been destroyed by the effects of fluoride. Last year, I met with an 11 year-old girl, who although healthy and attractive in appearance, carried a shy demeanor and rarely smiled. The reason: ugly, discolored teeth. Being raised in West Texas, she spent her youth exposed to an excessive amount of fluoride, a poison dentists nationwide promote as beneficial to teeth.

This story is not uncommon. In fact, there are thousands of girls, boys, and adults suffering from this affliction of the teeth known as "fluorosis", which is characterized by brown stains and extremely porous enamel. Oftentimes, pieces of tooth will break off with little manipulation. But the damage to the teeth is only the tip of the iceberg. Dermatitis, gastric distress, musculoskeletal problems, pulmonary disease, cancer and even death are all associated with fluoride poisoning.¹ Proctor and Gamble, the makers of Crest toothpaste, acknowledge that a family-size tube (7 oz.) of toothpaste "...contains enough fluoride to kill a small child." In fact, they include a warning of its toxic potential on every tube they sell.² So, why is fluoride touted as the panacea in dentistry? Why do the American Dental Association (ADA) and dentists adamantly promote its use in decay prevention?

Toxic Waste

The 1920's and 30's witnessed a tremendous growth of the aluminum and phosphate fertilizer industries. Fluoride, a major byproduct of both, gave rise to a waste problem. The Environmental Protection Agency required companies to install pollution-control devices to trap the fluoride waste, but this only solved part of the problem. After successfully marketing fluoride as a rat poison and insecticide, there still remained a huge surplus. In 1937, Dr. Gerald Cox of the Mellon Institute (note: the Mellons owned ALCOA~Aluminum Company of America) came up with a solution: Dump the excess fluoride in the public drinking water, and promote it as decay prevention.³ Dr. Cox was able to convince others of this notion by publishing "evidence" that fluoride was indeed beneficial to teeth. His evidence included: 1) a study claiming that sound teeth contained more fluoride than decayed teeth, 2) a laboratory study purporting that the offspring of female rats fed fluoride had less tooth decay, and lastly, 3) a report claiming that people raised in naturally high-fluoride areas had less tooth decay than those raised in low-fluoride areas.⁴ In 1938, Dr. H. Trendley Dean, the Director of the National Institute of Dental Research, corroborated Dr. Cox's claims of fluoride's benefits.⁵ Pressured by extensive lobbying, the US Public Health Service prematurely endorsed fluoridation...and still does today.

But, not everyone sang the praises of fluoride. The ADA initially denounced it and warned of its dangers in 1944:

*“We do know the use of drinking water containing as little as 1.2 to 3.0 parts per million of fluorine will cause such developmental disturbances in bones as osteosclerosis, spondylosis, and osteopetrosis, as well as goiter, and we **cannot** afford to run the risk of producing such serious systemic disturbances in applying what is at present a doubtful procedure intended to prevent development of dental disfigurements among children.*

Because of our anxiety to find some therapeutic procedure that will promote mass prevention of caries, the seeming potentialities of fluorine appear speculatively attractive, but, in the light of our present knowledge or lack of knowledge of the chemistry of the subject, the potentialities for harm far outweigh those for good.”⁶

Despite these warnings and the widespread knowledge of fluoride’s toxic effects, fluoridation became heavily promoted. On January 25, 1945, merely three months after the ADA-issued warning, Grand Rapids, Michigan became the first city to be artificially fluoridated.¹ Grand Rapids was to serve as a test city and its decay rates were to be compared with those of non-fluoridated Muskegon, Michigan for 10 years. At that time it would be determined whether or not fluoridation was safe and effective. After only five years, it was observed that the decay rates of **both** cities had decreased. For convenience, Muskegon was “dropped” as a control city and the only published result from the study noted the decrease in tooth decay in fluoridated Grand Rapids.

Decay Prevention?

Does fluoride have any therapeutic benefits? According to *Pharmacology and Therapeutics for Dentistry*, “An optimal level of fluoride in the water supply provides significant protection against caries...communal water fluoridation continues to be the cornerstone of an ideal caries prevention program.”⁷ When fluoride comes in contact with tooth enamel, it alters its chemical structure, rendering it resistant to demineralization (breakdown caused by decay). Ironically, the consequence of this is that fluoride disrupts collagen metabolism in the process, causing mechanical breakdown of the enamel. Collagen, a major protein involved in bone and muscle mineralization, acts as the body’s “glue”. Fluoride acts by interfering with the enzymes necessary for producing intact collagen, leading to formation of imperfect collagen and irregular bone.⁸ Researchers at Harvard University and the National Institutes of Health knew this in 1960, but unfortunately failed to bring this information to the public.

False Evidence

Numerous researchers have attempted to show that fluoride added to public water systems reduces tooth decay and many of these studies are the basis for today’s fluoridation campaigns. There has yet to exist, however, a double-blinded study (a critical requirement in eliminating examiner bias) successfully proving this hypothesis. In fact, several epidemiological human studies have shown results to the contrary.

In 1986-87, the largest study of fluoridation and tooth decay in the United States was undertaken and involved 39,207 schoolchildren, aged 5-17, in 84 areas nationwide.⁹ The reported results of the study showed that children raised in fluoridated areas have less

decay than those raised in non-fluoridated areas...*or did they?* Dr. John Yiamouyiannis, biochemist and president of the Safe Water Foundation, examined the data from the dental examinations under the order of the US Public Health Service. What he found was disturbing: There was *no* significant difference in the decay rates of teeth in fluoridated versus non-fluoridated areas at any age!¹⁰

In spite of this information, pharmaceutical companies have tried testing fluoride in medications for osteoporosis. Because of its perceived bone-building properties, fluoride was added to certain drugs in the hope that it would help “build” bone in those stricken with osteoporosis. Results to date indeed show increased thickness in the bones of these patients; however, the bone created is *more* porous and *more* susceptible to fracture. Fluoride-containing medications have not been approved for use in osteoporosis but continue to be studied.

Cancer Risk

“Everything causes cancer?” Dr. Dean Burk, chief chemist for the US National Cancer Institute answers this question with “perhaps...*but* fluoride causes more human cancer death, and causes it faster, than any other chemical.”¹¹

He strengthened his stance, along with Dr. Yiamouyiannis, through a series of studies proving fluoridated cities had higher cancer death rates than non-fluoridated cities. In 1976, their results were confirmed by the US National Cancer Institute and fluoride was declared a cancer threat by court mandates.¹¹ In 1984, Dr. Takeki Tsutsui of the Nippon Dental College in Japan conclusively showed that fluoride not only caused genetic damage in animals, but was also capable of transforming normal cells into cancer cells.¹² Proctor and Gamble conducted their own studies in 1989 that showed *increases* in squamous cell dysplasias in animals fed sodium fluoride. For some reason, these findings were not released by the US Public Health Service.¹³

It's Everywhere

In order to avoid fluoride, one must know where it exists. The largest amount of fluoride comes from fluoridated water. In a fluoridated community, it is recommended to invest in a home water distiller, or purchase distilled water. Water obtained through reverse osmosis is also good, but only removes about 75% of the fluoride. Spring water may be used as long as its fluoride concentration is less than 0.2 parts per million. Beverages such as soft drinks, beer, wine, and juice drinks bottled in fluoridated areas should also be avoided. The labels usually list the city of production. A 1991 analysis of Diet Coke[®] bottled in Chicago showed a fluoride level nearly three times the “optimal” level of 1.0 parts per million.¹⁴ Care should also be taken to avoid foods produced in fluoridated areas in which water is a main constituent (like soup). Other sources of fluoride to avoid include toothpastes, mouthrinses, as well as vitamin tablets and drops fortified with fluoride. And, of course, one should avoid any office fluoride treatment by a dentist or hygienist.

There's Good News and Bad News

The bad news is that fluoride remains heavily promoted by dentists nationwide, and is currently in nearly every major US city's water system. The good news is that numerous organizations are actively speaking out against public fluoridation. A 1987 issue of the Journal of the Canadian Dental Association published an article conceding that fluoridation is not performing as dentists have been claiming.¹⁵ In 1992, the Food and Drug Administration admitted they had no clear information to prove fluoride supplements were either safe or effective in reducing tooth decay. In addition, the American Chemical Society has recently published articles questioning the safety and effectiveness of fluoride.¹

Many European countries (Sweden, Denmark, and Holland to name a few) have banned fluoridation, while others have never fluoridated their drinking water. In fact, only 2% of the total European population lives in a fluoridated area. Public fluoridation is predominantly a health concern here in the US. On the West Coast, fluoridationists recently won a battle with Los Angeles residents intent on keeping their drinking water fluoride-free. After 30 years of defeating fluoridation proposals, the city finally bowed to the opposition. Las Vegas joined that list shortly after, and just this past month, San Antonio residents were forced to begin drinking fluoridated water. On the East Coast, however, anti-fluoridationists seem to be faring better. Two years ago, residents of Nashua, New Hampshire defeated a proposal to fluoridate their community despite heavy promotion by local dentists and other health professionals. Neighboring Manchester denied a similar referendum as well.

Diet ~ The Solution

Fluoridationists are not intimidated, though. In the past fifty years, the US Public Health Service's efforts to bring fluoridation to the public have been very successful. Forty-four of the 50 largest cities in the US are fluoridated. Nationally, about 65% of the population have access to fluoridated water.¹⁶ Assuming fluoride provides any beneficial effect in small amounts, it is certainly not a panacea for oral health. It is, in fact, a potent poison. Diet, lifestyle, and home-care are ultimately your best weapons against decay. In fact, most dental problems arise from nutritional imbalances. Dr. Weston Price, an accomplished scientist and dentist, describes how diet is the key to preventing decay in his acclaimed book, *Nutrition and Physical Degeneration*. His extensive studies covering 16 different civilizations over half a century ago clearly identified refined sugar as the major culprit in the decay process. Those who didn't indulge in sugar enjoyed cavity-free mouths. As elementary as this may sound, the information is as valid today as it was then.

Be Informed

Make yourself aware of the risks involved with fluoridation and protect yourself accordingly. Many healthcare practitioners promote the benefits of fluoride to dental health, blindly accepting biased research, oftentimes from non-scientific sources. All of the research I uncovered promoting fluoride had sources referring to each other...there

was no hard data in any of these studies. According to estimates of the Safe Water Foundation, fluoridation is responsible for the poisoning of over 130,000,000 Americans. As long as there are bureaucrats with vested interests in fluoridation, and dentists continue to promote its use, the fluoride bandwagon is going to be difficult to stop.

Author's Note: Austin is fluoridated at 0.86 ppm and has been since 1968.

BIO:

Dr. Cole graduated from the University of Texas Health Science Center, Dental School in San Antonio in 1993. He maintains a private practice focused in advanced restorative dentistry with a biologically-based foundation. He is a former clinical professor at the Dental School in San Antonio and is an active member of the International Academy of Oral Medicine and Toxicology. He has published numerous articles relating to metal-free dentistry, and lectures on related topics. He can be reached for questions and comments at (512) 472-3565 and online at griffincole@yahoo.com

¹ JA Yiamouyiannis, *Fluoride, The Aging Factor*, Health Action Press, 1993.

² *Environmental Action*, p 18, July / August 1984.

³ Gerald Cox, "Causes and Control of Dental Caries", *Dental Rays*, Vol 13, pp 14-18, 50-52 (1937).

⁴ Gerald Cox, "Discussion", *Journal of American Medical Association*, Vol 113, p 1753 (1938).

⁵ H. Trendley Dean, "Endemic Fluorosis and Its Relation to Dental Caries", *Public Health Reports*, Vol 53, pp 1443-1452 (1938).

⁶ "Editorial: Effect of Fluorine on Dental Caries", *Journal of the American Dental Association*, Vol 31, pp 1369-1363 (1944).

⁷ Ernest Newbrun, *Pharmacy and Therapeutics For Dentistry*, The Mosby Company, 1989, p 604.

⁸ K. Ishida, "The Effects of Fluoride on Bone Metabolism", *Koku Eisei Gakkai Zasshi*, Vol 31, No. 2, pp 74-78 (1981).

⁹ JA Yiamouyiannis, "Water Fluoridation and Tooth Decay: Results from the 1986-87 National Survey of US Schoolchildren", *Fluoride* 1990, Vol 23, pp 55-67.

¹⁰ A. Taylor and N. Taylor, "Effect of Sodium Fluoride on Tumor Growth", *Proceedings of the Society for Experimental Biology and Medicine*, Vol 119, pp 252-255 (1965).

¹¹ JA Yiamouyiannis, "Relationship between Fluoridation of Drinking Water and Increase in Cancer Death Rate", *Der Naturarzt*, Vol 98, No. 7, pp 216-218 (1976).

¹² Takeki Tsutsui, et al., "Sodium Fluoride-induced Morphological and Neoplastic Transformation, Chromosome Aberrations, Sister Chromatid Exchanges, and Unscheduled DNA Synthesis in Cultured Syrian Hamster Embryo Cells", *Cancer Research*, Vol 44, pp 938-941 (1984).

¹³ Proctor and Gamble. Carcinogenicity studies with sodium fluoride. Presented at the *National Institute of Environmental Health Sciences*, July 27, 1985.

¹⁴ JG Stannard et al., "Fluoride levels and fluoride contamination of fruit juices", *J. Clin. Pediatric Dentistry*, Vol 16, pp 38-40 (1991).

¹⁵ AS Gray, "Fluoridation: Time for a New Baseline?" *Journal of the Canadian Dental Association*, Vol 53, pp 763-765 (1987).

¹⁶ C. Luz, "Fluoride: A Close Look at the History, the Votes, the Future of Fluoridation" *ADA News*, Vol 30, No. 11, pp 1-11, June 7, 1999.