

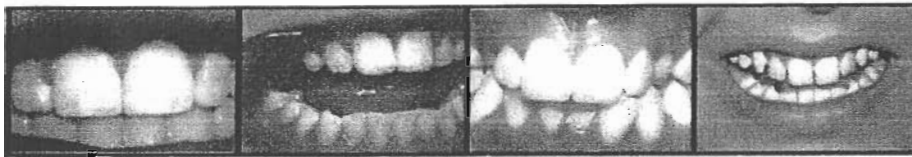
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3) CDC Releases New National Data on Dental Fluorosis in American Children

When children ingest too much fluoride they are at risk of developing a condition known as dental fluorosis. In its milder forms, dental fluorosis produces cloudy spots and streaks on the teeth, while in its advanced forms fluorosis can weaken the enamel and cause it to crumble and break. Fluoride causes these conditions by accumulating within the tooth and interfering with the tooth's normal mineralization process. By interfering with tooth mineralization, dental fluorosis represents a toxic effect of fluoride, and thereby raises the larger question of what other (less visible) tissues in the body may be similarly affected. As noted by the Environmental Working Group:

"Fluorosis is the result of fluoride rearranging the crystalline structure of a tooth's enamel as it is still growing. It is evidence of fluoride's potency and ability to cause physiologic changes within the body, and raises concerns about similar damage that may be occurring in the bones."

The extent to which dental fluorosis provides a visible indication of systemic harm remains a contested issue. What is not contested, however, is that millions of American children now have some form of it, with fluoridated water one of the main causes.

In 2007, the Centers for Disease Control released the latest national survey data on the rate of dental fluorosis among US teenagers (3). The survey, conducted between 1999 and 2004 by CDC's National Health and Nutrition Examination Survey (NHANES), found that 41% of 12-15 year olds, and 36% of 16-19 year olds, have dental fluorosis. In other words, over 1 in 3 American teenagers now display a visible sign of fluoride overexposure. This is the highest national rate of fluorosis ever recorded in the US, far higher than the 1-10% range found in the 1940s, and considerably higher than the 23% found to be affected in the 1980s.

Not only has the prevalence of fluorosis increased, but its severity has increased as well. Whereas 1.4% of children had moderate or severe fluorosis in the 1980s, about 3.5% of children have it today, almost a three-fold increase. Both moderate, and severe, fluorosis are very disfiguring conditions that may embarrass and cause psychological stress to a child, particularly if present on the front two teeth. According to the National Research Council, severe fluorosis may also cause adverse effects on a child's health by weakening the protective function of the tooth's enamel.

REFERENCE:

3) Beltran E. (2007). Prevalence of Enamel Fluorosis Among 12-19 Year-Olds, U.S., 1999-2004. IADR/AADR/CADR 85th General Session and Exhibition, March 21-24, 2007.

2755 Prevalence of Enamel Fluorosis Among 12-19 Year-Olds, U.S., 1999-2004

E. BELTRAN, Centers for Disease Control and Prevention, Atlanta, GA, USA, and **L. BARKER**, U.S. Centers for Disease Control and Prevention, Atlanta, GA, USA

Objective: To describe the prevalence of enamel fluorosis among adolescents aged 12 to 15 and 16 to 19 years using data from the three most recent cycles of the National Health and Nutrition Examination Surveys (NHANES) in the U.S: 1999-2000, 2001-2002, and 2003-2004. **Methods:** NHANES is an ongoing survey of representative samples of the civilian non institutionalized U.S. population. Intraoral examinations were conducted by seven trained dentists using standardized criteria, with no examiner serving in all three cycles. Enamel fluorosis was assessed in all permanent teeth using Dean's Fluorosis Index (DFI). Data were analyzed in SAS and SUDAAN to account for the complex sample design. **Results:** Table below presents percentages (standard errors) and prevalence of fluorosis, including very mild or higher severity.

Cycle:	1999-2000		2001-2002		2003-2004		1999-2004	
Age:	12-15	16-19	12-15	16-19	12-15	16-19	12-15	16-19
Unaffected & questionable	60.63 (4.66)	66.25 (4.32)	65.95 (3.18)	70.57 (3.33)	51.58 (3.78)	55.10 (4.59)	60.12 (2.28)	64.55 (2.40)
Very Mild	26.17 (2.99)	21.16 (2.94)	24.82 (2.62)	20.63 (2.32)	34.58 (2.65)	31.96 (3.75)	27.98 (1.61)	24.10 (1.76)
Mild	8.67 (1.49)	6.98 (0.84)	6.57 (1.14)	6.47 (1.05)	10.31 (1.57)	9.67 (0.88)	8.34 (0.81)	7.58 (0.53)
Moderate & severe	4.53 (1.22)	5.61 (1.44)	2.66 (0.40)	2.33 (0.61)	3.52 (0.85)	3.27 (0.94)	3.56 (0.51)	3.78 (0.64)
Prevalence	39.37 (4.66)	33.75 (4.32)	34.05 (3.18)	29.43 (3.33)	48.42 (3.78)	44.90 (4.59)	40.60 (2.23)	36.29 (2.45)

Conclusions: Between 1999 and 2004, approximately 41% of adolescents aged 12 to 15 and 36% aged 16 to 19 years had enamel fluorosis. Moderate and severe fluorosis was observed in less than 4% in both age groups. Considering the little historical change in fluoride sources and practices at the age these adolescents were at risk for fluorosis, differences among data cycles suggest inter-examiner variability.

Seq #285 - Epidemiology

10:45 AM-12:00 PM, Saturday, March 24, 2007 Ernest N. Morial Convention Center Exhibit Hall I2-J

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THE WALL STREET JOURNAL

Some Young Children Get Too Much Fluoride In Caring for Teeth

Tara Parker-Pope

December 21, 1998

THE FLUORIDATION of public water systems in the U.S. since 1945 is often hailed as one of the great public-health advances made with fluoride. But a quick part of the problem is that too much fluoride is in their diets. The U.S. Centers for Disease Control just completed a study, to be published early next year, showing that children are exposed to fluoride from a variety of sources, including drinking water, toothpaste, fluoride supplements and grape juice. "There probably is excess exposure," says Dr. Shaddix, fluoride team leader at the CDC's division of health.

For years, groups [including some of the top scientists in the world] have opposed the fluoridation of public water systems, blaming fluoride for ailments ranging from allergies to cancer. But the CDC is quick to say excess fluoride causes problems that are cosmetic, with no other adverse health consequences. Fluoride does occur naturally in many foods, including tea. The CDC says the biggest problem is an apparent increase

in dental fluorosis, an unsightly and permanent discoloration of teeth. Fluorosis is caused by overexposure to fluoride at a time when teeth are just coming in. Children under six years old are particularly vulnerable. A recent national study found that

22% of U.S. children have some form of dental fluorosis. Bleaching agents often used by dentists to whiten teeth often use fluoride. "A whole lot less need for fluoride supplements," says Dr. Shaddix. "Pediatricians and dentists routinely give out fluoride supplements in fluoridated areas. But you put those two together, and you could get a big problem with fluorosis." The CDC also wants doctors and dentists to get a better idea of a child's eating and drinking habits before prescribing supplements. Some grape juice and fluoride than some grape content of as much as 10 parts per million, compared with one part per million in fluoridated water. Between two and 10 parts per million of fluoride. Colas, soft drinks and juices that are bottled in areas where the public water supply is fluoridated also contain fluoride. The CDC is calling for new labeling rules requiring manufacturers to list a product's fluoride content. If parents fear their child isn't getting enough fluoride, they should talk with their doctor about other possible sources,

Children may have too much fluoride in their diets - CDC



CDC- "dental fluorosis, an unsightly and permanent discoloration" .."caused by overexposure to fluoride"

The
PROFESSIONALS' STATEMENT

Calling for an end to
Water Fluoridation

"It is time for the US, and the few remaining fluoridating countries, to recognize that fluoridation is outdated, has serious risks that far outweigh any minor benefits, violates sound medical ethics and denies freedom of choice.

Fluoridation must be ended now."

*Signed by over 2,000 medical, scientific, and environmental health professionals as of:
JANUARY 2009*

To view the list of signers, or to sign this statement, go to:
www.FluorideAlert.Org

We, the undersigned professionals, come from a variety of disciplines but all have an abiding interest in ensuring that government public health and environmental policies be determined honestly, with full attention paid to the latest scientific research and to ethical principles.



8

RECENT EVENTS
and
U R G E N T

The Professionals' Statement Calling for an end to Water Fluoridation

1



The publication in 2006 of a 500-page review of fluoride's toxicology by a distinguished panel appointed by the National Research Council of the National Academies (NRC, 2006). The NRC report concluded that the US Environmental Protection Agency's (EPA) safe drinking water standard for fluoride (i.e. maximum contaminant level goal or MCLG) of 4 parts per million (ppm) is unsafe and should be lowered. Despite over 60 years of fluoridation, the report listed many basic research questions that have not been addressed. Still, the panel reviewed a large body of literature in which fluoride has a statistically significant association with a wide range of adverse effects. These include an increased risk of bone fractures, decreased thyroid function, lowered IQ, arthritic-like conditions, dental fluorosis and, possibly, osteosarcoma.

The average fluoride daily intakes (*) associated with many of these adverse effects are reached by some people consuming water at the concentration levels now used for fluoridation -- especially small children, above average water drinkers, diabetics, people with poor kidney function and other vulnerable sub-groups. For example, the average fluoride daily intake associated with impaired thyroid function in people with iodine deficiency (about 12% of the US population) is reached by small children with average consumption of fluoridated water at 1 ppm and by people of any age or weight with moderate to high fluoridated water consumption. Of special note among the animal studies is one in which rats fed water containing 1 ppm fluoride had an increased uptake of aluminum into the brain, with formation of beta-amyloid plaques, which is a classic marker of Alzheimer's disease pathology in humans. **Considering the substantial variation in individual water intake, exposure to fluoride from many other sources, its accumulation in the bone and other calcifying tissues and the wide range of human sensitivity to any toxic substance, fluoridation provides NO margin of safety for many adverse effects, especially lowered thyroid function.**

* Note: "Daily intake" takes into account the exposed individual's bodyweight and is measured in mg. of fluoride per kilogram bodyweight.

2

The evidence provided by the US Centers for Disease Control and Prevention (CDC) in 2005 that 32% of American children have dental fluorosis – an abnormal discoloration and mottling of the enamel. This irreversible and sometimes disfiguring condition is caused by fluoride. Children are now being overdosed with fluoride, even in non-fluoridated areas, from water, swallowed toothpaste, foods and beverages processed with fluoridated water, and other sources. Fluoridated water is the easiest source to eliminate.



3

The American Dental Association's policy change, in November 2006, recommending that only the following types of water be used for preparing infant formula during the first 12 months of life: "purified, distilled, deionized, demineralized, or produced through reverse osmosis."

This new policy, which was implemented to prevent the ingestion of too much fluoride by babies and to lower the risk of dental fluorosis, clearly excludes the use of fluoridated tap water. The burden of following this recommendation, especially for low income families, is reason alone for fluoridation to be halted immediately. Formula made with fluoridated water contains 250 times more fluoride than the average 0.004 ppm concentration found in human breast milk in non-fluoridated areas (Table 2-6, NRC, 2006).



4

The CDC's concession, in 1999 and 2001, that the predominant benefit of fluoride in reducing tooth decay is TOPICAL and not SYSTEMIC. To the extent fluoride works to reduce tooth decay, it works from the outside of the tooth, not from inside the body. It makes no sense to drink it and expose the rest of the body to the long term risks of fluoride ingestion when fluoridated toothpaste is readily available.

Fluoride's topical mechanism probably explains the fact that, since the 1980s, there have been many research reports indicating little difference in tooth decay between fluoridated and non-fluoridated communities (Leverett, 1982; Colquhoun, 1984; 1985 and 1987; Diesendorf, 1986; Gray, 1987; Brunelle and Carlos, 1990; Spencer, 1996; deLiefde, 1998; Locker, 1999; Armfield and Spencer, 2004; and Pizzo 2007). Poverty is the clearest factor associated with tooth decay, not lack of ingested fluoride. According to the World Health Organization, dental health in 12-year olds in non-fluoridated industrialized countries is as good, if not better, than those in fluoridated countries (Neurath, 2005).



5

In 2000, the publication of the UK government sponsored "York Review," the first systematic scientific review of fluoridation, found that NONE of the studies purporting to demonstrate the effectiveness of fluoridation to reduce tooth decay were of grade A status, i.e. "high quality, bias unlikely" (McDonagh et al., 2000).

Bone Cancer 4/10/09

6

The publication in May 2006 of a peer-reviewed, case-controlled study from Harvard University which found a 5-7 fold increase in osteosarcoma (a frequently fatal bone cancer) in young men associated with exposure to fluoridated water during their 6th, 7th and 8th years (Bassin et al., 2006). This study was surrounded by scandal as Elise Bassin's PhD thesis adviser, Professor Chester Douglass, was accused by the watchdog Environmental Working Group of attempting to suppress these findings for several years. While this study does not prove a relationship between fluoridation and osteosarcoma beyond any doubt, the weight of evidence and the importance of the risk call for serious consideration.

7

The admission by federal agencies, in response to questions from a Congressional subcommittee in 1999-2000, that the industrial grade waste products used to fluoridate over 90% of America's drinking water supplies (fluorosilicate compounds) have never been subjected to toxicological testing nor received FDA approval for human ingestion (Fox, 1999; Hazan, 2000; Plaisier, 2000; Thurnau, 2000).

8

The publication in 2004 of "The Fluoride Deception" by Christopher Bryson. This meticulously researched book showed that industrial interests, concerned about liabilities from fluoride pollution and health effects on workers, played a significant role in the early promotion of fluoridation. Bryson also details the harassment of scientists who expressed concerns about the safety and/or efficacy of fluoridation (Bryson, 2004).

References cited in this statement can be accessed at:
www.FluorideAlert.org

We call upon Members of Congress (and legislators in other fluoridating countries) to sponsor a new Congressional (or Parliamentary) Hearing on Fluoridation so that those in government agencies who continue to support the procedure, particularly the Oral Health Division of the CDC, be compelled to provide the scientific basis for their ongoing promotion of fluoridation. They must be cross-examined under oath if the public is ever to fully learn the truth about this outdated and harmful practice.

We call upon all medical and dental professionals, members of water departments, local officials, public health organizations, environmental groups and the media to examine for themselves the new documentation that fluoridated water is ineffective and poses serious health risks. It is no longer acceptable to simply rely on endorsements from agencies that continue to ignore the large body of scientific evidence on this matter -- especially the extensive citations in the NRC (2006) report discussed above.

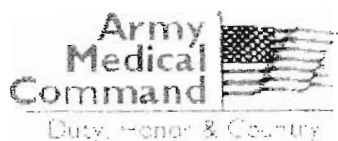
The untold millions of dollars that are now spent on equipment, chemicals, monitoring, and promotion of fluoridation could be much better invested in nutrition education and targeted dental care for children from low income families. The vast majority of enlightened nations have done this.

It is time for the US, and the few remaining fluoridating countries, to recognize that fluoridation is outdated, has serious risks that far outweigh any minor benefits, violates sound medical ethics and denies freedom of choice. Fluoridation must be ended now.

Signed by over 2,000 medical, scientific, and environmental health professionals as of:
JANUARY 2009

To view the list of signers, or to sign this statement, go to:
www.FluorideAlert.org

F7



U.S. Army Medical Command Concerned About Fluoridating

Dr. Phyllis Mullenix, a researcher who has investigated the neurotoxicity of fluoride since 1987, was contacted by BSE, a contractor for the U.S. Army Medical Command, (MEDCOM). Headquartered at Fort Sam Houston, San Antonio, Texas, it has some 25,000 soldiers and 28,000 civilian employees in its command. MEDCOM commands four Army installations including the world famous Walter Reed Army Medical Center, in Washington, D.C.

MEDCOM was concerned about fluoridating the water supply of Fort Detrick, Maryland and Dr. Mullenix's expert opinion was requested.

The following is Dr. Mullenix's response (actual letter) with references at the end.

Phyllis J. Mullenix, Ph.D.
P.O. Box 753
Andover, Massachusetts 01810-3347
Tele. (978) 475-9196
FAX (978) 749-9447

May 5, 1999

BSA Environmental Services
21403 Chagrin Boulevard
Suite 101
Beachwood, OH 44122

Re: Request for information on drinking water fluoridation

Dear Drs. Romoser-Breno and Beaver:

The April 15 request for comments regarding water fluoridation is vague in that no assurances are offered as to how my written opinion will be used. Thus, a copy of this letter will be sent to Mr. Gilbert Gonzales at Fort Detrick. Without the benefit of having read the "Environmental Assessment" report to which you referred to in your letter, I run the risk of being redundant with regard to the material already prepared. With these caveats, I offer the following comments about the advantages and disadvantages of water fluoridation.

To start, I must correct a statement you made in your letter regarding my being an "expert on drinking water fluoridation issues." Prior to 1982, my knowledge of fluoride was limited to television commercials saying It was good for my teeth. Rather, my

expertise was detection of neurotoxicity, which brought me to the Department of Psychiatry at Boston's Children's Hospital and Neuropathology at the Harvard Medical School. It was there that I met Dr. Jack Hein, Director of the Forsyth Dental Center and the scientist responsible for putting mono fluorophosphate (MFP) into toothpaste. Dr. Hein was a student of Dr. Harold Hodge, the chief pharmacologist on the Manhattan Project who conducted the world renowned studies on fluoride (1) and started water fluoridation. Dr. Hein invited me to Forsyth to study the neurotoxic potential of materials that dentists use, starting with fluoride, and we set up the first toxicology department in any dental research institution in the world. I was made Head of the department, and Dr. Hodge moved to Boston and became a member of my department where he stayed until his death in 1990. Another Manhattan Project scientist and fluoride researcher, Dr. Ben Amdur, also joined the department.

My investigations of the neurotoxicity of fluoride started in 1987. Using a new computer pattern recognition system capable of a sensitivity and objectivity other behavioral measures did not possess, we studied an animal model first developed for the study of dental fluorosis. Frankly, we expected to find nothing. The results from the first experiment we thought must be wrong, so we kept repeating the study with more animals, different doses, sexes, ages and methods of administration. Like quicksand, every effort we made sank us further into the realization that brain function was impacted by fluoride. Scientific integrity dictated that we publish our results (2,3), but employed at a dental research institution made us weak in the knees to do so.

In our 1995 paper (2), we reported that brain function was vulnerable to fluoride, that the effects on behavior depended on the age at exposure and that fluoride accumulated in brain tissues. Rats exposed as adults displayed behavior-specific changes typical of cognitive deficits, whereas rats exposed prenatally had dispersed behaviors typical of

hyperactivity. Brain histology was not examined, but the behavioral changes were consistent with those seen when hippocampal development is interrupted and memory problems emerge. Overall, we concluded that the rat study flagged potential for motor dysfunction, IQ deficits and/or learning disabilities in humans.

Criticisms of our study by dentists say that our results in rats are not relevant to humans because the doses we used were too high (75-125 ppb NaF in drinking water). These criticisms are without merit because our doses in rats produce a level of fluoride in the plasma equivalent to that found in humans drinking 5- 10 ppm fluoride in water, or humans receiving some treatments for osteoporosis. This plasma level is exceeded ten times over one hour after children receive topical applications of some dental fluoride gels. Thus, humans are being exposed to levels of fluoride that we know alters behavior in rats. Perhaps dentists see no problem with this fact, but scientists involved with toxicity risk assessment will view it differently. The fluoride levels in the drinking water of our rats were not high, they were taken from the well known animal model developed for the study of dental fluorosis, a model used repeatedly by dental researchers for several years.

Other criticisms of equal absurdity have been expressed by dentists about our study. However, they are not important to dwell upon now because that first study was but one piece of an emerging picture. Soon after our study was published, we learned of two epidemiology studies from China showing IQ deficits in children over-exposed to fluoride via drinking water or soot from burning coal (4,5). Next, we found a literature review that assembled case reports spanning 60 years on neurological effects in humans exposed to fluoride (6). A common theme in these reports was that fluoride exposure impaired memory and concentration and that it caused lethargy, headache, depression and confusion. The depression is not something to ignore because suicide occurs more

frequently than expected in populations of fluoride workers (7).

More recently, another laboratory investigation found that chronic exposure to fluoride (1 ppm) in drinking water of rats compromised neuronal and cerebrovasculature integrity (blood brain barrier) and increased aluminum concentrations in brain tissues (8). Another study found that fluoride in drinking water of rats decreased membrane lipids important to proper brain function (9). Moreover, the latest studies have shown that fluoride accumulates in human and animal pineal glands where it impairs melatonin production (10, 11), a finding critical when it is considered that melatonin is an agent that protects the central nervous system from radiation by scavenging free radicals (12). Finally, there is a recent study published which reports that silicofluorides in fluoridated drinking water increase levels of lead in children's blood, a risk factor that predicts higher crime rates, attention deficit disorder and learning disabilities (13).

Unfortunately, the link between fluoride and the brain does not end with the above mentioned studies. In 1993 while studying the neurotoxicity associated with the treatments of childhood leukemia, we demonstrated that the fluorinated steroid dexamethasone disrupted behavior in rats to a greater degree than did its non fluorinated counterpart prednisolone (14,15). This finding prompted a clinical study of children treated for leukemia, where it was found that the fluorinated steroid was more detrimental to IQ than the nonfluorinated steroid, in particular reading comprehension, arithmetic calculation and short-term working memory deficits were greater (16). In short, this finding has fueled a growing concern about the contribution of fluorinated pharmaceuticals to the total body burden of fluoride.

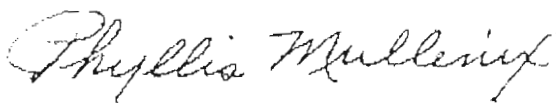
As you decide whether or not to fluoridate the water supplies of Fort Detrick, it is imperative that you consider the impact on total body burden of fluoride. The soldier today is a different individual, facing a very different situation than that encountered fifty years ago when fluoridation was promoted as a "safe and effective" means to protect against tooth decay. The difference stems from the fact that 1) fluoride levels in water are well beyond the dose touted as optimum for caries prevention; and 2) people today, especially soldiers, are exposed to substances and conditions that will interact with fluoride exposure and magnify harmful effects (i.e., exposure to beryllium, lead, strontium, aluminum, cholinesterase-inhibiting pesticides, uranium hexafluoride, stress, nutritional deficiencies, increased water consumption due to extreme exercises, fluorinated pharmaceuticals, and nerve gases including sarin).

In summary, my opinion is that Dr. Hodge during the Manhattan Project requested funds from Col. Stafford L. Warren to do animal experimentation to determine central nervous system effects of fluoride (17). He did so because he had clinical evidence that the fluoride component of uranium hexafluoride caused "mental confusion, drowsiness and lassitude among the workmen. Yet, he never got to do those studies, and because this information was classified, he never discussed his findings with me. Perhaps, however, this explains why he was so intensely interested in my fluoride studies up to the time of his death.

Therefore, in good conscience

and never disappear again. My ignorance of fluoride in the beginning was a matter of chance. If you ignore this evidence today, it will be a matter of choice. Good luck with doing the right thing.

Sincerely,



Phyllis J. Mullenix, Ph.D.

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SIERRA CLUB POSITION
ON
MANDATORY DRINKING WATER FLUORIDATION

Adopted September 25, 2001

The Sierra Club understands the historic reason that fluoridation of public water supplies has been promoted and that it may have been historically justifiable. There are now, however, valid concerns regarding the potential adverse impact of fluoridation on the environment, wildlife, and human health.

The Sierra Club therefore supports giving communities the option of rejecting mandatory fluoridation of their water supplies.

To protect sensitive populations, and because safer strategies and methods for preventing tooth decay are now available, we recommend that these safer alternatives be made available and promoted.

The Sierra Club recommends that a national review of the effects of fluoridation on the environment and on public health be undertaken by the National Academy of Sciences and by the US Geological Survey, the federal agency responsible for developing water quality data and communicating it to the public. This would provide the American public and public officials with reliable information for forming future public policy.