March 6, 2001

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50 Reasons to Oppose Fluoridation

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1) Fluoride is not an essential nutrient. No disease has ever been linked to a fluoride deficiency. Humans can have perfectly good teeth without fluoride.

2) Fluoridation is not necessary. Most Western European countries are not fluoridated and have experienced the same decline in dental decay as the US (*see data from World Health Organization on levels of tooth decay in Europe, US, New Zealand, and Australia in Appendix 1*).

3) Fluoridation's role in the decline of tooth decay is in serious doubt. The largest survey ever conducted in the US (over 39,000 children from 84 communities) by the National Institute of Dental Research showed little difference in tooth decay among children in fluoridated and non-fluoridated communities **(**Hileman, 1989 and Yiamouyiannis, 1990). According to the NIDR's statisticians, the study found an average difference of only 0.6 DMFS (Decayed Missing and Filled Surfaces) in the permanent teeth of children aged 5-17 residing in either fluoridated or unfluoridated areas (Brunelle and Carlos, 1990). This difference is less than one tooth surface! There are 128 tooth surfaces in a child's mouth.

4) Where fluoridation has been discontinued in communities from Canada, the former East Germany, Cuba and Finland, dental decay has not increased but has actually *decreased* (Maupome et al, 2001; Kunzel and Fischer,1997,2000; Kunzel et al, 2000 and Seppa et al, 2000).

5) One of the early trials which helped to launch fluoridation took place in Newburgh, NY, with Kingston, NY as the control community. After 10 years of this trial (which was methodologically flawed), it looked as if there was a large decrease in dental caries in the fluoridated community compared to the non-fluoridated community. However, when children were re-examined in these two cities in 1995 (50 years after the trial began) there was practically no difference in the dental decay in the two communities. If anything, the teeth in unfluoridated Kingston were slightly better (Kumar and Green 1998).

6) Modern research (e.g. Diesendorf, 1986; Colquhoun, 1997, and De Liefde, 1998) shows that decay rates were coming down before fluoridation was introduced and have continued to decline even after its benefits would have been maximized. Many other factors influence tooth decay. Studies in India (Teotia and Teotia, 1994) and Tuczon, Arizona (Steelink, 1992) have shown that tooth decay actually increases as the fluoride concentration in the water increases.

7) Leading dental researchers (Levine, 1976; Fejerskov, Thylstrup and Larsen, 1981; Carlos, 1983; Featherstone, 1987, 1999, 2000; Margolis and Moreno, 1990; Clark, 1993; Burt, 1994; Shellis and Duckworth, 1994 and Limeback, 1999, 2000), and the Centers for Disease Control and Prevention (CDC,

1999) are now acknowledging that the mechanism of fluoride's benefits are mainly **TOPICAL** not **SYSTEMIC**. Thus, you don't have to swallow fluoride to protect teeth. As the benefits of fluoride (if they exist) are topical, and the risks are systemic, it makes more sense, for those who want to take the risks, to deliver the fluoride directly to the tooth in the form of toothpaste. Since swallowing fluoride is unnecessary, there is no reason to force people (against their will) to drink fluoride in their water suppy. (*All the references for "topical versus systemic benefits" are listed as a group in the reference section*).

8) The US fluoridation program has massively failed to achieve one of its key objectives, i.e. to lower dental decay rates while *minimizing dental fluorosis* (mottled and discolored enamel). The goal of the early promoters of fluoridation was to limit dental fluorosis (in its mildest form) to 10% of children (NRC, 1993, pp. 6-7). The percentage of children with dental fluorosis in optimally fluoridated areas is up to **EIGHT TIMES** this goal (Williams, 1990; Lalumandier, 1995; Heller, 1997 and Morgan, 1998). The York Review estimates that up to 48% of children in optimally fluoridated areas have dental fluorosis in all forms and up to 12.5% in the mild to severe forms (McDonagh, 2000).

9) Dental fluorosis means that a child has been overdosed on fluoride. While the mechanism by which the enamel is damaged is not definitively known, it appears fluorosis may be a result of either inhibited enzymes in the growing teeth (Dan Besten 1999), or through fluoride's interference with the thyroid gland.

10) The level of fluoride put into water (1 ppm) is 100 times higher than normally found in mothers' milk (0.01 ppm) (Institute of Medicine, 1997). There are no benefits, only risks, for infants ingesting this heightened level of fluoride at such an early age (this is an age where susceptibility to environmental toxins is particularly high).

11) Fluoride is a cumulative poison. Only 50% of the fluoride we ingest each day is excreted through the kidneys, the remainder accumulates in our bones, pineal gland, and other tissues. If the kidney is damaged, fluoride accumulation will increase.

12) Fluoride is very biologically active even at low concentrations. It interferes with hydrogen bonding which is central to the structure and function of proteins and nucleic acids. Thus, fluoride has the potential to disrupt events at the very heart of living things (Emsley, 1981).

13) Fluoride inhibits enzymes in test tubes (Waldbott, 1978), in bacteria in the oral cavity (Featherstone, 2000), in the growing tooth (DenBesten, 1999), in bone (Krook and Minor, 1998) and in other tissues (Luke, 1998).

14) Fluoride has been shown to be mutagenic, cause chromosome damage and interfere with the enzymes involved with DNA repair in a variety of insect, tissue culture and animal studies (DHSS, 1991, Mihashi and Tsutsui, 1996).

15) Fluoride administered to animals at high doses wreaks havoc on the reproductive system - it renders sperm non-functional and increases the rate of infertility (Chinoy, et al, 1995; Kumar & Susheela, 1994; Chinoy & Narayana, 1994; Chinoy & Sequeira, 1989). A recent study from the US found increased rates of infertility among women living in areas with 3 or more ppm fluoride in the water. According to this latter study, which was published in the *Journal of Toxicology and Environmental Health*, "Most regions showed an association of decreasing TFR [Total Fertility Rate] with increasing fluoride levels" (Freni 1994).

16) Fluoride forms complexes with a large number of metals, which include metals which are needed in the body (like calcium and magnesium) and metals (like lead and aluminum) which are toxic to the body. This can cause a variety of problems. For example, fluoride interferes with enzymes where magnesium is an important co-factor, and it can help facilitate the uptake of aluminum into tissues where the aluminum wouldn't otherwise go.

17) Rats fed for one year with 1 ppm fluoride in doubly distilled and de-ionized water, using either sodium fluoride or aluminum fluoride, had morphological changes to their kidneys and brains and had an increased level of aluminum present in their brain (Varner et al, 1998). Aluminum in the brain is

associated with Alzheimers disease.

18) Fluoride and aluminum fluoride complexes interact with G-proteins and thus have the potential to interfere with many hormonal and some neurochemical signals (Struneka and Patocka, 1999).

19) Aluminum fluoride was recently nominated by the Environmental Protection Agency and National Institute of Environmental Health Sciences for testing by the National Toxicology Program. According to the **EPA** and **NIEHS**, aluminum fluoride currently has a "high health research priority" due to its "known neurotoxicity" (BNA, 2000). If fluoride is added to water which contains aluminum, than aluminum fluoride complexes will form.

20) Animal experiments show that fluoride exposure alters mental behavior (Mullenix et al, 1995). Rats dosed prenatally demonstrated hyperactive behavior. Those dosed postnatally demonstrated hypoactivity (i.e. under activity or "couch potato" syndrome).

21) Studies by Jennifer Luke (1997) showed that fluoride accumulates in the human pineal gland to very high levels. In her Ph.D thesis Luke has also shown in animal studies that fluoride reduces melatonin production and leads to an earlier onset of puberty.

22) Three studies from China show a lowering of IQ in children associated with fluoride exposure (Li et al, 1995; Zhao et al, 1996 and Lu et al, 2000). Another study (Lin et al, 1991) indicates that even just moderate levels of fluoride exposure (e.g. 0.9 ppm in the water) can exacerbate the neurological defects of iodine deficiency, which include decreased IQ and retardation. (According to the CDC, iodine deficiency has nearly quadrupled in the US since the 1970's, with nearly 12% of the population now iodine deficient.)

23) Earlier in the 20th century, fluoride was prescribed by a number of European doctors to reduce the activity of the thyroid gland for those suffering from hyperthyroidism (over active thyroid) (Merck Index, 1960, p. 952; Waldbott, et al., 1978, p. 163). With water fluoridation, we are forcing people to drink a thyroid-depressing medication which could serve to promote higher levels of hypothyroidism (underactive thyroid) in the population, and all the subsequent problems related to this disorder. Such problems include depression, fatigue, weight gain, muscle and joint pains, increased cholesterol levels, and heart disease.

It bears noting that according to the Department of Health and Human Services (1991) fluoride exposure in fluoridated communities is estimated to range from 1.58 to 6.6 mg/day, which is a range that actually overlaps the dose (2.3 - 4.5 mg/day) shown to decrease the functioning of the human thyroid (Galletti & Joyet, 1958). This is a remarkable fact, and certainly deserves greater attention considering the rampant and increasing problem of hypothyroidism in the United States. (In 1999, the second most prescribed drug of the year was Synthroid, which is a hormone replacement drug used to treat an underactive thyroid).

24) Some of the early symptoms of skeletal fluorosis, a fluoride-induced bone and joint disease that impacts millions of people in India, China, and Africa , mimic the symptoms of arthritis. According to a review on fluoridation by the journal of the American Chemical Society, "Because some of the clinical symptoms mimic arthritis, the first two clinical phases of skeletal fluorosis could be easily misdiagnosed" (Hileman, 1988). Few if any studies have been done to determine the extent of this misdiagnosis, and whether the high prevalence of arthritis in America (over 42 million Americans have it) is related to our growing fluoride exposure, which is highly plausible. The causes of most forms of arthritis (e.g. osteoarthritis) are unknown.

25) In some studies, when high doses of fluoride were used in trials to treat patients with osteoporosis in an effort to harden their bones and reduce fracture rates, it actually led to a **HIGHER** number of hip fractures (Hedlund and Gallagher, 1989; Riggs et al, 1990).

26) Eighteen studies (four unpublished, including one abstract) since 1990 have examined the possible

relationship of fluoridation and an increase in hip fracture among the elderly. Ten of these studies found an association, eight did not. One study found a dose-related increase in hip fracture as the concentration of fluoride rose from 1 ppm to 8 ppm (Li et al, 1999, to be published). Hip fracture is a very serious issue for the elderly, as a quarter of those who have a hip fracture die within a year of the operation, while 50 percent never regain an independent existence. *(All 18 of these studies are referenced as a group in the reference section)*.

27) One animal study (National Toxicology Program, 1990) shows a dose-related increase in osteosarcoma (bone cancer) in male rats. The initial finding of this study was of "clear evidence of carcinogenicity" a finding which was soon conspicuously downgraded to "equivocal evidence" (Marcus, 1990). EPA Professional Headquarters Union has requested that Congress establish an independent review of this study's results (Hirzy 2000).

28) Two epidemiological studies show a possible association (which some have discounted: Hoover, 1990 and 1991) between osteosarcoma in young men and living in fluoridated areas (National Cancer Institute, 1989 and Cohn, 1992). Other studies have not found this association.

29) Fluoridation is unethical because individuals are not being asked for their informed consent prior to medication. This is standard practice for all medication.

30) While referenda are preferential to imposed policies from central government, it still leaves the problem of individual rights versus majority rule. Put another way -- does a voter have the right to require that their neighbor ingest a certain medication (even if it's against that neighbor's will)?

31) Some people appear to be highly sensitive to fluoride as shown by case studies and double blind studies (Waldbott, 1978 and Moolenburg, 1987). This may relate to fluoride interfering with their hormone levels including those produced by their thyroid gland. Can we as a society force these people to drink fluoride?

32) According to the Agency for Toxic Substances and Disease Registry (ATSDR, 1993) some people are particularly vulnerable to fluoride's toxic effects; these include: the elderly, diabetics and people with poor kidney function. Again, can we in good conscience force these people to ingest fluoride on a daily basis?

33) Also vulnerable are those who suffer from malnutrition (e.g. calcium, magnesium, vitamin C, vitamin D and iodide deficiencies and protein poor diets). Those most likely to suffer from poor nutrition are the poor, who are precisely the people being targeted by new fluoridation proposals (Oral Health in America, May 2000). While being at heightened risk, poor families are less able to afford avoidance measures (e.g. bottled water or removal equipment).

34) Since dental decay is most concentrated in poor communities, we should be spending our efforts trying to increase the access to dental care for poor families. The real "Oral Health Crisis" that exists today in the United States, is not a lack of fluoride but poverty and lack of dental insurance.

35) Fluoridation has been found to be ineffective at preventing one of the most serious oral health problems facing poor children, namely, baby bottle tooth decay, otherwise known as early childhood caries (Jones, 2000).

36) Once fluoride is put in the water it is impossible to control the dose each individual receives. This is because, one, some people (e.g. manual laborers, athletes and diabetics) drink more water than others, and because, two, we receive fluoride from sources other than the water supply. Other sources of fluoride include food and beverages processed with fluoridated water; fluoridated dental products, and pesticide residues on food.

As one doctor has aptly stated, "No physician in his right senses would prescribe for a person he has never met, whose medical history he does not know, a substance which is intended to create bodily

change, with the advice: 'Take as much as you like, but you will take it for the rest of your life because some children suffer from tooth decay. ' It is a preposterous notion."

37) Despite the fact that it is recognized that we are ingesting too much fluoride, and despite the fact that we are exposed to far more fluoride in 2000 than we were in 1945 (when fluoridation began), the "optimal" fluoridation level is still 1 part per million, the same level deemed optimal in 1945!

38) The early studies conducted in 1945 -1955 in the US, which helped to launch fluoridation, have been heavily criticized for their poor methodology and poor choice of control communities (De Stefano, 1954; Sutton 1959, 1960 and 1996). According to Dr. Hubert Arnold, a statisician from the University of California at Davis, the early fluoridation trials "are especially rich in fallacies, improper design, invalid use of statistical methods, omissions of contrary data, and just plain muddleheadedness and hebetude."

39) The US Public Health Service first endorsed fluoridation in 1950, before one single trial had been completed (McClure, 1970)! It may not be coincidental that in the same year of the US PHS endorsement, the Sugar Research Foundation, Inc. (supported by 130 corporations) expressed its aim in dental research as, "To discover effective means of controlling tooth decay by methods other than restricting carbohydrate (sugar) intake" (Waldbott, 1965, p.131).

40) The fluoridation program has been very poorly monitored. There has never been a comprehensive analysis of the fluoride levels in the bones of the American people. US Health authorities have no idea how close we are getting to levels which will cause subtle or even serious bone and joint damage!

41) According to a letter received by New Jersey Assemblyman John Kelly, the Food and Drug Administration (FDA) has never approved the fluoride supplements given to children, which are designed to deliver the same amount of fluoride as fluoridated water.

42) The chemicals used to fluoridate water in the US are not pharmaceutical grade. Instead, they come from the wet scrubbing systems of the superphosphate fertilizer industry. These chemicals (90% of which are sodium fluorosilicate and fluorosilicic acid), are classified hazardous wastes contaminated with toxic metals and trace amounts of radioactive isotopes. Recent testing by the National Sanitation Foundation suggest that the levels of arsenic in these chemicals are high and of significant concern.

43) These hazardous wastes have not been tested comprehensively. The chemical usually tested in animal studies is pharmaceutical grade sodium fluoride, not industrial grade fluorosilicic acid. The assumption being made is that by the time this waste product has been diluted down, all the fluorosilicic acid will have been converted into free fluoride ion, and the other toxics and radioactive isotopes will be so dilute that they will not cause any harm, even with lifetime exposure. These assumptions have not been examined carefully by scientists, independent of the fluoridation program.

44) Studies by Masters and Coplan (1999) show an association between the use of fluorosilicic acid (and its sodium salt) to fluoridate water and an increased uptake of lead into children's blood.

45) Sodium fluoride is an extremely toxic substance -- just 3 to 5 grams, or about one teaspoon, is enough to kill a human being. Both children (swallowing gels) and adults (accidents involving malfunctioning of fluoride delivery equipment and filters on dialysis machines) have died from excess exposure.

46) Some of the earliest opponents of fluoridation were biochemists and at least 14 Nobel Prize winners are among numerous scientists who have expressed their reservations about the practice of fluoridation (see appendix 4 for list). Dr. James Sumner, who won the Nobel Prize for his work on enzyme chemistry, had this to say about fluoridation: "We ought to go slowly. Everybody knows fluorine and fluoride are very poisonous substances…We use them in enzyme chemistry to poison enzymes, those vital agents in the body. That is the reason things are poisoned; because the enzymes are poisoned and that is why animals and plants die" (Connett, 2000).

Last year's (2000) recipient of the Noble Prize for Medicine and Physiology, was Dr. Arvid Carlsson of Sweden. Dr. Carlsson was one of the leading opponents of fluoridation in Sweden. He was part of the panel that recommended that the Swedish government reject the practice, which they did in 1971. In her book "The Fluoride Question: Panacea or Poison" Anne-lise Gotzsche quotes Carlsson as follows: "It is not worthwhile to conceal the fact that it is a question of applying a pharmacologically active substance to an entire population" (p.69).

47) The Union representing the scientists at the US EPA headquarters in DC is on record as opposing water fluoridation (Hirzy, 1999) and rejects the US EPA's approval of the use of hazardous industrial waste products to fluoridate the public water supply.

48) Many scientists, doctors and dentists who have spoken out publicly on this issue have been subjected to censorship and intimidation (Martin 1991). Tactics like this would not be necessary if those promoting fluoridation were on secure scientific ground.

49) Promoters of fluoridation refuse to recognize that there is any scientific debate on this issue, despite the concerns listed above and objective reviews of the controversy (Hileman, 1988). Dr. Michael Easley, one of the most vocal proponents, goes so far as to say that there is no legitimate debate, whatsoever, concerning fluoridation. According to Easley, who works closely with the CDC and ADA, "Debates give the illusion that a scientific controversy exists when no credible people support the fluorophobics' view." Easley adds that

"a most flagrant abuse of the public trust occasionally occurs when a physician or a dentist, for whatever personal reason, uses their professional standing in the community to argue against fluoridation, a clear violation of professional ethics, the principles of science and community standards of practice" (Easley, 1999).

Comments like these led the associate technical director for Consumers Union, Dr. Edward Groth, to conclude that "the political profluoridation stance has evolved into a dogmatic, authoritarian, essentially antiscientific posture, one that discourages open debate of scientific issues" (Martin, 1991).

50) When it comes to controversies surrounding toxic chemicals, invested interests traditionally do their very best to discount animal studies and quibble with epidemiological findings. In the past, political pressures have led government agencies to drag their feet on regulating asbestos, benzene, DDT, PCBs, tetraethyl lead, tobacco and dioxins. With fluoridation we have had a fifty year delay. Unfortunately, because government officials have put so much of their credibility on the line defending fluoridation, and because of the huge liabilities waiting in the wings if they admit that fluoridation has caused an increase in hip fracture, arthritis, bone cancer, brain disorders or thyroid problems, it will be very difficult for them to speak honestly and openly about the issue. But they must, not only to protect millions of people from unnecessary harm, but to protect the notion that, at its core, public health policy must be based on sound science not political pressure. They have a tool with which to do this: it's called the Precautionary Principle. Simply put, this says: if in doubt leave it out. This is what most European countries have done and their children's teeth have not suffered, while their public's trust has been strengthened. It is like a question from a Kafka play. Just how much doubt is needed on just one of the health concerns identified above, to override a benefit, which when quantified in the largest survey ever conducted in the US, amounts to less than one tooth surface (out of 128) in a child's mouth?

For those who would call for further studies, we say fine. Take the fluoride out of the water first and then conduct all the studies you want. This folly must end without further delay.

APPENDIX 1. World Health Organization Data

Table: DMFT Status (Decayed, Missing & Filled Teeth) for 12 year olds. Organized by Country.

Country	DMFTs	Year	Status
Australia	0,8	1998	fluoridated
Zurich, SwitzerlandAustralia	0,84	1998	unfluoridated
Netherlands	0,9	1992-93	unfluoridated
Sweden	0,9	1999	unfluoridated
Denmark	0,9	2001	unfluoridated
UK (England, Scotland, N. Ire)	1,1	1996-97	10% fluoridated
Ireland	1,1	1997	fluoridated
Finland	1,1	1997	unfluoridated
US	1,4	1988-91	fluoridated
Norway	1,5	1998	unfluoridated
Iceland	1,5	1996	unfluoridated
New Zealand	1,5	1993	fluoridated
Belgium	1,6	1998	unfluoridated
Germany	1,7	1997	unfluoridated
Austria	1,7	1997	unfluoridated
France	1,9	1998	unfluoridated

Data from: WHO Oral Health Country/Area Profile Programme Department of Noncommunicable Diseases Surveillance/Oral Health WHO Collaborating Centre, Malmö University, Sweden http://www.whocollab.od.mah.se/euro.html

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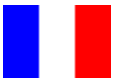
APPENDIX 2.

Statements on fluoridation by governmental officials from several countries:

Germany:

"Generally, in Germany fluoridation of drinking water is forbidden. The relevant German law allows exceptions to the fluoridation ban on application. The argumentation of the Federal Ministry of Health against a general permission of fluoridation of drinking water is the problematic nature of compuls[ory] medication." *(Gerda Hankel-Khan, Embassy of Federal Republic of Germany, September 16, 1999). www.fluoridealert.org/germany.jpeg*



France:

"Fluoride chemicals are not included in the list [of 'chemicals for drinking water treatment']. This is due to ethical as well as medical considerations." *(Louis Sanchez, Directeur de la Protection de l'Environment, August 25, 2000).*

Belgium:

"This water treatment has never been of use in Belgium and will never be (we hope so) into the future. The main reason for that is the fundamental position of the drinking water sector that it is not its task to deliver medicinal treatment to people. This is the sole responsibility of health services." (*Chr. Legros, Directeur, Belgaqua, Brussels, Belgium, February 28, 2000).* www.fluoridation.com/c-belgium.htm

Luxembourg:

"Fluoride has never been added to the public water supplies in Luxembourg. In our views, the drinking water isn't the suitable way for medicinal treatment and that people needing an addition of fluoride can decide by their own to use the most appropriate way, like the intake of fluoride tablets, to cover their [daily] needs." *(Jean-Marie RIES, Head, Water Department, Administration De L'Environment, May 3, 2000).*

Finland:

"We do not favor or recommend fluoridation of drinking water. There are better ways of providing the fluoride our teeth need." *(Paavo Poteri, Acting Managing Director, Helsinki Water, Finland, February 7, 2000).* www.fluoridation.com/c-finland.htm

"Artificial fluoridation of drinking water supplies has been practiced in Finland only in one town, Kuopio, situated in eastern Finland and with a population of about 80,000 people (1.6% of the Finnish population). Fluoridation started in 1959 and finished in 1992 as a result of the resistance of local population. The most usual grounds for the resistance presented in this context were an individual's right to drinking water without additional chemicals used for the medication of limited population groups. A concept of "force-feeding" was also mentioned.

Drinking water fluoridation is not prohibited in Finland but no municipalities have turned out to be willing to practice it. Water suppliers, naturally, have always been against dosing of fluoride chemicals into water." (Leena Hiisvirta, M.Sc., Chief Engineer, Ministry of Social Affairs and Health, Finland, January 12, 1996.)

Denmark:

"We are pleased to inform you that according to the Danish Ministry of Environment and Energy, toxic fluorides have never been added to the public water supplies. Consequently, no Danish city has ever been fluoridated." *(Klaus Werner, Royal Danish Embassy, Washington DC, December 22, 1999).* *www.fluoridation.com/c-denmark.htm*

Norway:

"In Norway we had a rather intense discussion on this subject some 20 years ago, and the conclusion was that drinking water should not be fluoridated." *(Truls Krogh & Toril Hofshagen, Folkehelsa Statens institutt for folkeheise (National Institute of Public Health) Oslo, Norway, March 1, 2000).* *www.fluoridation.com/c-norway.htm*

Sweden:

"Drinking water fluoridation is not allowed in Sweden...New scientific documentation or changes in dental health situation that could alter the conclusions of the Commission have not been shown." *(Gunnar Guzikowski, Chief Government Inspector, Livsmedels Verket -- National Food Administration Drinking Water Division, Sweden, February 28, 2000).* *www.fluoridation.com/c-sweden.htm*

Netherlands:

"From the end of the 1960s until the beginning of the 1970s drinking water in various places in the Netherlands was fluoridated to prevent caries. However, in its judgement of 22 June 1973 in case No. 10683 (Budding and co. versus the City of Amsterdam) the Supreme Court (Hoge Road) ruled there was no legal basis for fluoridation. After that judgement, amendment to the Water Supply Act was prepared to provide a legal basis for fluoridation. During the process it became clear that there was not enough support from Parlement [sic] for this amendment and the proposal was withdrawn." *(Wilfred Reinhold, Legal Advisor, Directorate Drinking Water, Netherlands, January 15, 2000).* *www.fluoridation.com/c-netherlands.htm*

Northern Ireland:

"The water supply in Northern Ireland has never been artificially fluoridated except in 2 small localities where fluoride was added to the water for about 30 years up to last year. Fluoridation ceased at these locations for operational reasons. At this time, there are no plans to commence fluoridation of water supplies in Northern Ireland." *(C.J. Grimes, Department for Regional Development, Belfast, November 6, 2000).*

Austria:

"Toxic fluorides have never been added to the public water supplies in Austria." *(M. Eisenhut, Head of Water Department, Osterreichische Yereinigung fur das Gas-und Wasserfach Schubertring 14, A-1015 Wien, Austria, February 17, 2000).* *www.fluoridation.com/c-austria.htm*

Czech Republic:

"Since 1993, drinking water has not been treated with fluoride in public water supplies throughout the Czech Republic. Although fluoridation of drinking water has not actually been proscribed it is not under consideration because this form of supplementation is considered:

- uneconomical (only 0.54% of water suitable for drinking is used as such; the remainder is employed for hygiene etc. Furthermore, an increasing amount of consumers (particularly children) are using bottled water for drinking (underground water usually with fluor)
- unecological (environmental load by a foreign substance)
- unethical ("forced medication")
- toxicologically and phyiologically debateable (fluoridation represents an untargeted form of supplementation which disregards actual individual intake and requirements and may lead to excessive health-threatening intake in certain population groups; [and] complexation of fluor in water into non biological active forms of fluor." (*Dr. B. Havlik, Ministerstvo Zdravotnictvi Ceske Republiky, October 14, 1999).*

APPENDIX 3.

Statement of Douglas Carnall, Associate Editor of the British Medical Journal, published on the BMJ website (http://bmj.com) on the day that they published the York Review on Fluoridation.

See this review on the web at *http://bmj.bmjjournals.com/cgi/content/full/321/7265/904/a*

British Medical Journal

October 7, 2000

Reviews

Website of the week

Water fluoridation

Fluoridation was a controversial topic even before Kubrick's Base Commander Ripper railed against "the international communist conspiracy to sap and impurify all of our precious bodily fluids" in the 1964 film Dr

Strangelove. This week's BMJ shouldn't precipitate a global holocaust, but it does seem that Base Commander Ripper may have had a point. The systematic review published this week (p 855) shows that much of the evidence for fluoridation was derived from low quality studies, that its benefits may have been overstated, and that the risk to benefit ratio for the development of the commonest side effect (dental fluorosis, or mottling of the teeth) is rather high.

Supplementary materials are available on the BMJ 's website and on that of the review's authors, enhancing the validity of the conclusions through transparency of process. For example, the "frequently asked questions" page of the site explains who comprised the advisory panel and how they were chosen ("balanced to include those for and against, as well as those who are neutral"), and the site includes the minutes of their meetings. You can also pick up all 279 references in Word97 format, and tables of data in PDF. Such transparency is admirable and can only encourage rationality of debate.

Professionals who propose compulsory preventive measures for a whole population have a different weight of responsibility on their shoulders than those who respond to the requests of individuals for help. Previously neutral on the issue, I am now persuaded by the arguments that those who wish to take fluoride (like me) had better get it from toothpaste rather than the water supply (see www.derweb.co.uk/bfs/index.html and http://www.npwa.freeserve.co.uk/ for the two viewpoints).

Douglas Carnall
Associate Editor
British Medical Journal

APPENDIX 4.

List of 14 Noble Prize winners who have opposed or expressed reservations about fluoridation.

1) Adolf Butenandt (Chemistry, 1939)
2) Arvid Carlsson (Medicine, 2000)
3) Hans von Euler-Chelpin (Chemistry, 1929).
4) Walter Rudolf Hess (Medicine, 1949)
5) Corneille Jean-François Heymans (Medicine, 1938)
6) Sir Cyril Norman Hinshelwood (Chemistry, 1956)
7) Joshua Lederberg (Medicine, 1958)
8) William P. Murphy (Medicine, 1934)
9) Giulio Natta (1963 Nobel Prize in Chemistry)
10) Sir Robert Robinson (Chemistry, 1947)
11) Nikolai Semenov (Chemistry, 1956)
12) James B. Sumner (Chemistry, 1946)
13) Hugo Theorell (Medicine, 1955)
14) Artturi Virtanen (Chemistry, 1945)

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THE 19 STUDIES ON THE POSSIBLE ASSOCIATION OF HIP FRACTURE AND FLUORIDATED-WATER.

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a. **Studies Reporting an Association between fluoridated water (1 ppm fluoride) & hip fracture**.

1. a) Cooper C, et al. (1990). Water fluoride concentration and fracture of the proximal femur. J Epidemiol Community Health 44: 17-19.

   b) Cooper C, et al. (1991). Water fluoridation and hip fracture. JAMA 266: 513-514 (letter, a reanalysis of data presented in 1990 paper).

2. Danielson C, et al. (1992). Hip fractures and fluoridation in Utah's elderly population. Journal of the American Medical Association 268(6): 746-748.

3. Hegmann KT, et al. (2000). The Effects of Fluoridation on Degenerative Joint Disease (DJD) and Hip Fractures. Abstract #71, of the 33rd Annual Meeting of the Society For Epidemiological research, June 15-17, 2000. Published in a Supplement of Am. J. Epid. P. S18.

4. Jacobsen SJ, et al. (1992). The association between water fluoridation and hip fracture among white women and men aged 65 years and older; a national ecologic study." Annals of Epidemiology 2: 617-626.

5. Jacobsen SJ, et al. (1990). Regional variation in the incidence of hip fracture: US white women aged 65 years and olders. J Am Med Assoc 264(4): 500-2.

6. a) Jacqmin-Gadda H, et al. (1995). Fluorine concentration in drinking water and fractures in the elderly. JAMA 273: 775-776 (letter).

   b) Jacqmin-Gadda H, et al. (1998). Risk factors for fractures in the elderly. Epidemiology 9(4): 417-423. (An elaboration of the 1995 study referred to in the JAMA letter).

7. Keller C. (1991) Fluorides in drinking water. Unpublished results. Discussed in Gordon, S.L. and Corbin, S.B,(1992) Summary of Workshop on Drinking Water Fluoride Influence on Hip Fracture on Bone Health. Osteoporosis Int. 2, 109-117.

8. Kurttio PN, et al. (1999). Exposure to natural fluoride in well water and hip fracture: A cohort analysis in Finland. American Journal of Epidemiology 150(8): 817-824.

9. May DS, Wilson MG. (1992). Hip fractures in relation to water fluoridation: an ecologic analysis. Unpublished data, discussed in Gordon SL, and Corbin SB. (1992). Summary of Workshop on Drinking Water Fluoride Inflruenbce on Hip Fracture on Bone Health. Osteoporosis Int. 2:109-117.

b. **Studies reporting an association between water-fluoride levels higher than fluoridated water (2 to 4 ppm) & hip fracture.**

Li Y, et al. (2001). Effect of long-term exposure to fluoride in drinking water on risks of bone fractures. J Bone Miner Res.16(5):932-9.

Sowers M, et al. (1991). A prospective study of bone mineral content and fracture in communities with differential fluoride exposure. American Journal of Epidemiology 133: 649-660.

c. **Studies Reporting No Association between water fluoride & hip fracture**:

(Note that in 4 of these 8 studies, an association was actually found between fluoride and some form of fracture - distal forearm, wrist, even hip. See notes and quotes below.)

Cauley J. et al. (1995). Effects of fluoridated drinking water on bone mass and fractures: the study of osteoporotic fractures. J Bone Min Res 10(7): 1076-86.

Feskanich D, et al. (1998). Use of toenail fluoride levels as an indicator for the risk of hip and forearm fractures in women. Epidemiology 9(4): 412-6.

While this study didn't find an association between water fluoride and hip fracture, it did find an association - albeit non-significant 1.6 (0.8-3.1) - between fluoride exposure and elevated rates of forearm fracture.

Hillier S, et al. (2000). Fluoride in drinking water and risk of hip fracture in the UK: a case control study. The Lancet 335: 265-2690.

Jacobsen SJ, et al. (1993). Hip Fracture Incidence Before and After the Fluoridation of the Public Water Supply, Rochester, Minnesota. American Journal of Public Health, 83, 743-745.

Karagas MR, et al. (1996). Patterns of Fracture among the United States Elderly: Geographic and Fluoride Effects. Ann. Epidemiol. 6 (3), 209-216.

As with Feskanich (1998) this study didn't find an association between fluoridation & hip fracture, but it did find an association between fluoridation and distal forearm fracture, as well as proximal humerus fracture. "Independent of geographic effects, men in fluoridated areas had modestly higher rates of fractures of the distal forearm and proximal humerus than did men in nonfluoridated areas."

Lehmann R, et al. (1998). Drinking Water Fluoridation: Bone Mineral Density and Hip Fracture Incidence. Bone, 22, 273-278.

Phipps KR, et al. (2000). Community water fluoridation, bone mineral density and fractures: prospective study of effects in older women. British Medical Journal, 321: 860-4.

As with Feskanich (1998) and Karagas (1996), this study didn't find an association between water fluoride & hip fracture, but it did find an association between water fluoride and other types of fracture - in this case, wrist fracture. "There was a non-significant trend toward an increased risk of wrist fracture."

Suarez-Almazor M, et al. (1993). The fluoridation of drinking water and hip fracture hospitalization rates in two Canadian communities. Am J Public Health 83: 689-693.

While the authors of this study conclude there is no association between fluoridation and hip fracture, their own data reveals a statistically significant increase in hip fracture for men living in the fluoridated area. According to the authors, "although a statistically significant increase in the risk of hip fracture was observed among Edmonton men, this increase was relatively small (RR=1.12)."

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i) Locker D. (1999). Benefits and Risks of Water Fluoridation. An Update of the 1996 Federal-Provincial Sub-committee Report. Prepared for Ontario Ministry of Health and Long Term Care.

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