Canadian Water Fluoridation Deputation

Notes to Accompany the Text of the Five Minute Video

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Note 1: Degrees are M.D., Washington University School of Medicine, St. Louis; Ph.D. (biophysics), University of California, Berkeley. The book is *The Case Against Fluoride*, 2010, Chelsea Green.

Note 2: Promoters rarely cite primary research. Primary research is the definition of a problem and the collection, analysis and interpretation of data. Reviews are not primary research. In the case of fluoridation most reviews have been done by panels of fluoridation promoters selected by governments that promote fluoridation. The members of such panels are often dentists and few if any are scientists or professional risk analysts.

Note 3: According to the Fluoride Action Network, “Since October 2010, 29 communities have halted fluoridation. The total population that has been freed from forced fluoridation over the past year is approximately 2,571,500 people.” European countries that had fluoridation stopped it during the 1970s for various combinations of three reasons (according to officials of those countries): not effective, not safe, not ethical.

Note 4: Concerning control of dose, it must be noted that controlling the concentration in tap water does not control dose, even less the dose per unit body weight. The amount of water drunk by an individual per day varies easily twenty-fold. Outdoor construction workers in warm climates, athletes, diabetics, infants and young children, among others, drink much more than the average adult.

Any sizable population includes a spread of sensitivity to any drug or procedure. The standard margin of safety to account for this intraspecies variation is 10. For example, if a harm is seen at a dose or 4 mg/day, then a maximum dose would be set a 0.4 mg/day. In the case of fluoridation, especially sensitive groups include infants, persons with low dietary iodine, persons with kidney disease - all consisting of substantial numbers of people.

Note 5: The precautionary principle should guide us in making such a choice. It is discussed in relation to fluoridation in Chapter 21 of *The Case Against Fluoride.* It requires that the benefit of some procedure must be balanced against the possibility and consequences of harm. If there is credible evidence of harm and the possible harm would significantly compromise health or well-being then only a procedure that is sure to produce a benefit greater than would the lack of that harm is justified. So the factors to

be considered are the possible benefit, the possible harm, and whether there are feasible alternatives for producing the benefit. In the case of fluoridation the possibility of harm is great, almost certain for some harms (dental fluorosis and thyroid suppression); the benefit is slight, probably nonexistent; the possible benefit does not pertain to a threat to public health; there are harmless and accessible alternatives for attaining the desired benefit. So fluoridation fails the test of the precautionary principle.

Note 6: Where the chemical added to water for fluoridation is hexafluorosilicic acid (HFSA) or its sodium salt, it is received as a 23% solution in water with contaminants such as lead, arsenic, uranium and other heavy metals. These impurities are present in small amounts but some of them are very toxic. Curiously it is illegal to dump this into an ocean, lake or river or to put it into or onto the ground yet it is added to tap water. It is listed as a dangerous substance requiring special, and expensive, handling. It is costly in itself and also corrosive enough that water departments that use it face renovations costing millions of dollars every few years.

Proponents often say that fluoridation is merely “topping up” a natural component of a city’s water. But the natural fluoride in rivers and lakes is calcium fluoride which dissociates to a much lesser degree than does HFSA. Much of the fluoride as calcium fluoride is excreted while about half of the ingested fluoride ion is sequestered in the body where it accumulates throughout the life of a person using fluoridated water. Unlike calcium fluoride, HFSA dissociates almost completely in water but reassociates in the stomach or produces hydrofluoric acid which is absorbed into the blood. Another difference is that fluoridation with HFSA is associated with higher levels of lead, a strong neurotoxin, in children’s blood.

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