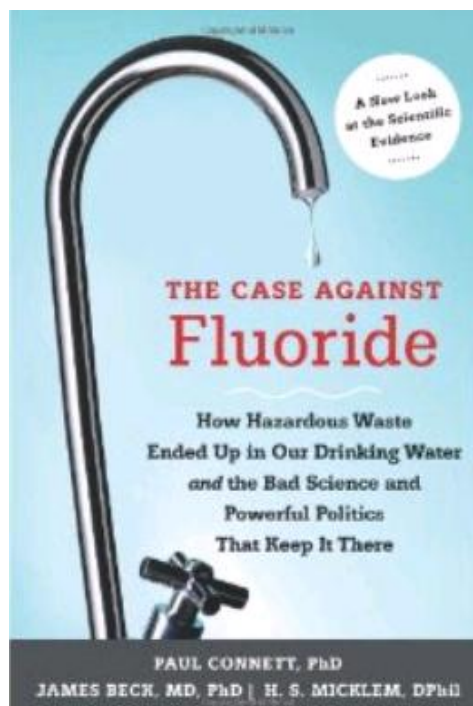


Excerpts and Comments

The Case Against Fluoride

Published September 2010

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James Beck, MD, PhD - biophysics
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This commentary is written by Eleanor Weiss. This is a very dense and authoritative book, and the purpose of the commentary is to extract just a few brief highlights for those interested in this topic. My background is engineering, not medicine, so readers of this commentary should reference the book itself where important decisions might be made relating to this subject.

The Case Against Fluoride

How Hazardous Waste Ended Up in Our Drinking Water and the Bad Science and Powerful Politics That Keep It There

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EXCERPTS AND COMMENTARY

BOTTOM LINE [Eleanor Weiss talking]: Officials with the authority to decide whether to fluoridate or not cherry pick from the studies, and most of them ignore the studies which point up problems. (The familiar human condition, in other words.)

Most of this book consists of the authors analyzing studies related to fluoride, arguing why this study or that one shows such-and-such. Their arguments often require considerable concentration to grasp. By contrast, the excerpts presented here are just the briefest highlights of the discussion, excerpts which the authors present to alert the public as to why the public should be concerned about fluoridated water. A reader who wants to see full details of the authors' arguments must refer to the book itself.

Foreword (Albert W. Burgstahler, PhD - Professor Emeritus, Chemistry, University of Kansas, Editor, *Fluoride*)

"While working at the University of Kansas in Lawrence KS, starting in the mid-1950s, I developed a low-thyroid condition that was not relieved by taking thyroid extracts. In 1964, I became aware of clinical reports of verified illness from fluoridated water by the distinguished Michigan allergist George L. Waldbott, MD (1898-1982), appearing mostly in specialized foreign journals.

"From these reports I learned that fluoride in drinking water at the recommended level of 1 part per million (or 1 mg of fluoride per liter of water) could cause a wide variety of reversible toxic effects, including excessive tiredness, aching joints, neuromuscular papins, and other symptoms often associated with hypothyroidism.

"Knowing that Lawrence [KS] had fluoridated water and that I was consuming four or five times the amount mentioned by Waldbott, I switched to distilled water and found that my low thyroid symptoms quickly began to disappear.

"My wife, Patricia, who had been experiencing back pain for some years, also found her discomfort was completely relieved after she also changed to distilled water."

1. Poor Medical Practice, 3

[Page 7] "In a June 3, 1993, letter to U.S. Food and Drug Administration commissioner Dr. David Kessler, former New Jersey assemblyman John V. Kelly wrote, "The Food and Drug Administration Office of Prescription Drug Compliance has confirmed, to my surprise, that there are no studies to demonstrate either the safety or effectiveness of these drugs [fluorides], which FDA classified as unapproved new drugs.

[...]

"The designation 'unapproved drug' means that it has not gone through rigorous trials to establish either its effectiveness or its safety."

2. An Inappropriate and Inefficient Practice, 13

[Page 13] "In 1999, the U.S. Centers for Disease Control and Prevention finally conceded what many dental researchers had been reporting over the previous two decades: Fluoride's predominant mechanism of action was *topical*, not *systemic*. In other words, if fluoride works at all, it does so via direct exposure to the outside of the tooth and not from inside the body."

3. The Chemicals Used, 16

[Page 16] "Wet scrubbers were introduced into the phosphate manufacturing process to remove two highly toxic gases: hydrogen fluoride (HF) and silicon tetrafluoride (SiF₄). For many years these gases had damaged vegetation in the vicinity of phosphate plants, as well as crippling cattle on local farms. [...] When this [fluoride removed by water scrubbing] resulting solution has reached a concentration of 23 percent, it is shipped untreated in large tanker trucks to chemical companies that then send it around the country to be as a fluoridating agent in over 90 percent of the water supplies fluoridated in the United States. Sodium fluoride is used as a fluoridating agent in less than 10 percent of the water fluoridated."

4. Who Is in Charge?, 23

5. An Experimental Program, 29

[Pages 29-30, brief quotes or paraphrases] In summary, there have been hardly any studies over the history of fluoridation to show its safety or effectiveness:

1. ... trials began in 1945, practically no health studies undertaken or published
2. ... U.S. Public Health service endorsed fluoridation in 1950, no comprehensive studies
3. ... series of professional organizations endorsed fluoridation following PHS, still no comprehensive studies
5. Since 1950, the fluoridation program has not been monitored in a scientific or comprehensive fashion
8. No government that has promoted fluoridation has made any effort to investigate the many anecdotal reports that a subsection of the population is highly sensitive to fluoride's toxicity and is experiencing a range of common symptoms that they claim clear up when the source of fluoride is removed

[Page 31] "... the vast majority of countries in the world -- including China, India, Japan, and nearly all European countries -- do not fluoridate their water."

6. Fluoridation and Tooth Decay, 37

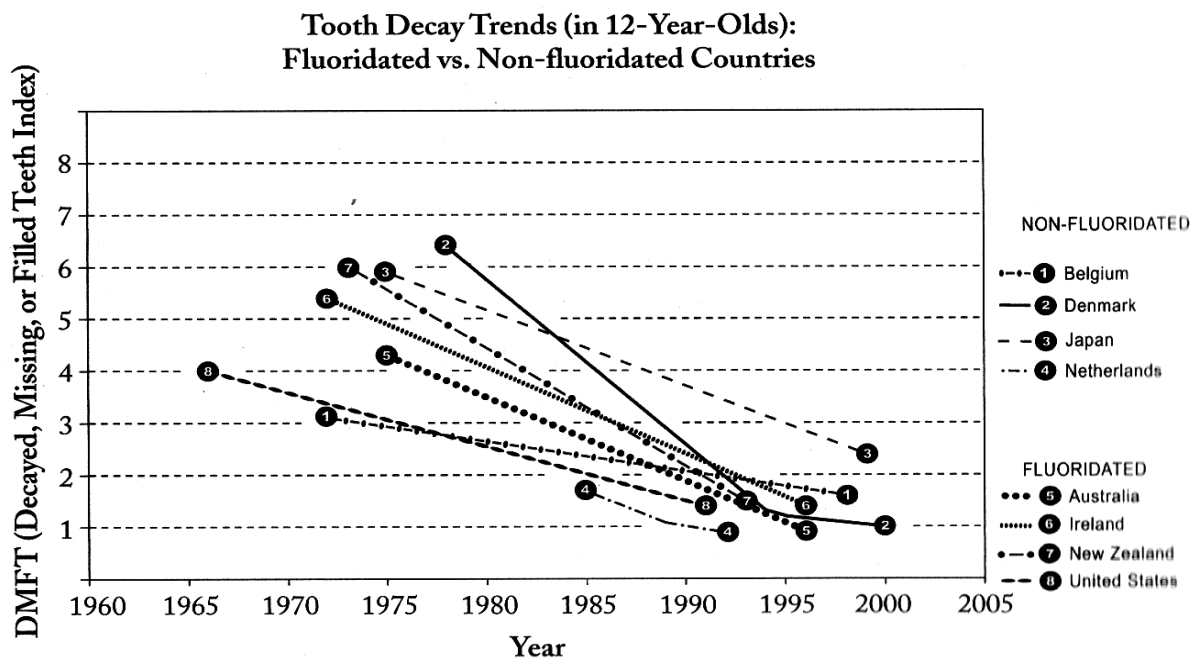


Figure 6.1. Tooth decay trends in twelve-year-olds in fluoridated vs. a representative sample of non-fluoridated countries. Graph based upon plots by Chris Neurath.⁸ *Source:* World Health Organization, 2004.

[Page 38 - Eleanor Weiss:] Notice, in the graph above, that between roughly 1970 and 2000, tooth decay trends are approximately the same when comparing fluoridated countries with non-fluoridating countries.

7. The Early Evidence Re-examined, 48

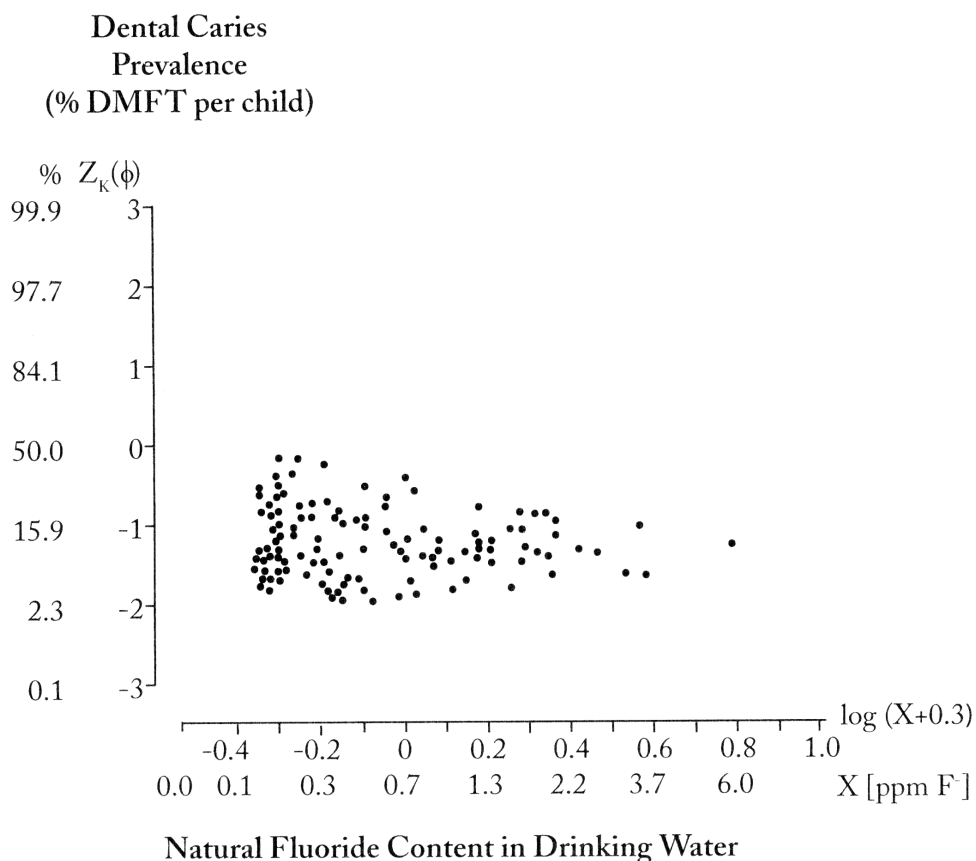


Figure 7.2. Ziegelbecker's plot of prevalence of tooth decay versus water fluoride levels. Tooth decay is plotted as the probit values of the percentages of the average DMFT in each community (the Z_k scale). The probit transformation is a standard procedure for making percentage data linear and more amenable to statistical analysis. The fluoride water levels (X ppm) in each community are plotted on a logarithmic scale as $\log(X + 0.3)$. The addition of 0.3 is Ziegelbecker's adjustment for other sources of fluoride in addition to water. *Source:* Reproduced from Ziegelbecker, 1981.⁸

[Page 50 - Eleanor Weiss] Notice that tooth decay, in the plot above, appears to be weakly correlated (if at all) with levels of fluoride in the water.

8. Key Modern Studies, 55

[Page 64] "Several studies and reviews published since the 1980s have shown that the protective effect of fluoridation is extremely small, [...] Several modern studies have shown that if fluoridation is stopped, decay rates do not increase."

9. The Great Fluoridation Gamble, 1930-1950, 67
10. The Great Fluoridation Gamble, 1950-, 87
11. Dental Fluorosis, 109
12. Fluoride's Chemistry, Biochemistry and Physiology, 115
13. Fluoride Poisoning of Humans: Early Reversible Effects, 126

[Page 26 - Dr. George Waldbott, MD] "In 1955 Dr. Waldbott described a case of progressive illness in a woman aged 35, characterized by weakness, severe headaches, pains in the epigastric area, diarrhea alternating with constipation, and hemorrhages of the uterus. A cardinal feature of the disease was a gradual loss of strength and increasing fatigue which led to complete disability. Waldbott attributed this disease to intolerance to fluoridated water. The patient improved promptly following elimination of fluoridated water. When the subject was given, unbeknown to herself, a test dose of fluoride, the disease recurred. Subsequently, Waldbott (1956) reported a series of 52 similar cases."

14. The 2006 National Research Council Report, 137

[Pages 144-145] "The [National Research Council] committee unanimously concluded that 'Fluoride appears to have the potential to initiate or promote cancers.' "

[Page 146] "These [issues concerning the use of silicofluorides in public water supplies] include increased lead in children's blood, increased leaching of lead into water from plumbing fixtures, and the addition of other substances to the drinking water along with the silicofluorides. [...] However, in the addition of impure silicofluorides to drinking water, some arsenic and lead are generally added as well, ..."

15. Fluoride and the Brain, 148

[Page 150] "One year after Spittle's [Bruce J. Spittle, MB ChB DPM] paper, and shortly after Mullenix's [Phyllis J. Mullenix, PhD, pharmacology and toxicology] paper appeared, the first articles from China on lowered IQ appeared in the journal *Fluoride*. There have now been twenty-three studies from four different countries (Iran, India, Mexico, and China) demonstrating a possible association between fluoride exposure and lowered IQ in children; ..."

[Page 150] "Prior to Mullenix's work, published in 1995, it was generally assumed that little fluoride entered or accumulated in the brain. However, several researchers have now shown that fluoride can accumulate in the brain, some specifying the areas of the brain where the fluoride is located."

[Page 151] "Several papers have shown that fluoride is concentrated in, or has an effect upon, the hippocampus [region of the brain]. Damage to the hippocampus usually results in difficulty forming new memories and recalling events that occurred prior to the damage."

16. Fluoride and the Endocrine System, 157
17. Fluoride and the Bone, 169

[Page 170] "It has been known since the 1930s that ingesting too much fluoride can cause stiff and painful joints. Some of the early symptoms of skeletal fluorosis -- a fluoride-induced bone and joint disease that affects millions of people in India, China, and several other countries with high levels of natural fluoride -- mimic the symptoms of arthritis, making it easy to misdiagnose, especially by doctors who are not trained in detecting fluorosis."

[Page 170] "Few, if any, studies have been done to determine the extent of misdiagnosis, or whether the high prevalence of arthritis in America (one in five American adults has some form of arthritis) is related to lifelong and ever growing exposure to fluoride."

[Page 171] "In 2006, the NRC [National Research Council] report discussed the four stages of skeletal fluorosis:

"Excessive intake of fluoride will manifest itself in musculoskeletal disease with a high morbidity. This pathology has generally been termed skeletal fluorosis."
["Morbidity" means departure from a state of physical or psychological well-being, resulting from disease, illness, injury, or sickness, not necessarily leading to death.]

18. Fluoride and Osteosarcoma, 181
19. Fluoride and the Kidneys, and Other Health Issues, 195

[Page 196] "Also, and perhaps most significant, a human study by Liu et al. in China has found a dose-dependent relationship between fluoride ingestion and kidney damage in children."

[Page 197 - re the 2006 NRC report] "However, two recent studies of sixty-three adults with 'endemic fluorosis' and forty-five healthy controls found that fluorotic individuals had decreased elasticity of the aorta and dysfunctions of the left ventricle."

20. Margin of Safety, 201
21. The Precautionary Principle, 212

[Page 213] "The vast majority of European countries do not fluoridate their water, and yet, according to the World Health Organization figures, their children's teeth are as good if not better than children's teeth in fluoridating countries."

22. Weak and Inadequate Science, 217

[Page 217] "In light of such shortcomings, it is astonishing that, sixty years later, the efficacy of ingested fluoride in preventing dental caries has *never* been tested in an RCT [randomized clinical trial]. Nor, as we saw in chapter 2, has the FDA taken any active interest in fluoride, possibly the most extensively taken drug in history."

[Pages 219-220 - paraphrased for brevity] "... no studies have been carried out in the United States and most other fluoridating countries to investigate possible relationships between fluoridation and the following:

- Lowered IQ in children
- Alzheimer's disease in adults
- Lowered thyroid function
- Increased arthritis rates in adults
- Bone fractures in children
- Lowered melatonin levels and earlier onset of puberty
- Irritable bowel syndrome"

[Eleanor Weiss:] What the authors are getting at here is that there is evidence that all of the above effects are associated with fluoridation in some studies. So why has a known poison been forced on the public for sixty years without definitive official studies to prove this poison is actually safe and has a benefit?

23. Promoters' Strategies and Tactics, 225

[Page 225] "Most courses at dental schools and public health programs do not challenge the dogma of the 'safety and effectiveness' of fluoridation. Fluoridation is promoted as a crusade."

[Page 226] "In July 1996, at a meeting of the Canton, New York, village board, Dr. Connett heard local citizens say that although they weren't scientists, they 'trusted' their doctor on the safety of fluoridation. After the meeting, Dr. Connett offered copies of three scientific articles to one such doctor who happened to be present.

"He refused to take the copies, saying that he did not have time to read the literature. What was troubling to Dr. Connett was not just that the doctor was unwilling to read the articles, but that he was quite content to have the public trust his judgement on a matter for which he was not prepared to do the research."

[Page 230] "In October 2009, Colleen Wulf of the Ohio Department of Health explained to a councillor in Athens, Ohio, why she would not debate Dr. Paul Connett:

"Our reasoning for not participating in debates on fluoridation is simple. Debates give the illusion that a scientific controversy exists."

[Page 231 - re a 1979 white paper] "The American Dental Association Council on Dental Health and Planning wrote, 'Individual dentists must be convinced that they need **not** be familiar with scientific reports and field investigations on fluoridation ...' " [Eleanor Weiss:] In other words, dental professionals should not, according to their ADA organization, become familiar with fluoridation studies.

[Page 232] "Ironically, the one specialist journal, *Fluoride*, that deals with all aspects of fluoride research has **not** been readily available to mainstream readers of the medical and scientific literature."

24. Self-Serving Governmental Reviews, 238

[Page 244] "In September 2009, Health Canada published a draft report that relied heavily on the findings of the 2008 expert panel. [See below re that panel] The report concludes that the Maximum Allowable Concentration level of 1.5 ppm for fluoride should remain unchanged, thereby protecting Canada's fluoridation program.

"The authors of this report called the findings on neurotoxicity 'controversial,' but their analysis suggested that they were unaware of most of the studies that have been published in that area. They cited only five out of the twenty-three studies on lowered IQ and cited no studies that did not find that association.

"In support of their conclusion that 'the significance of these studies is uncertain,' they referenced reviews that had appeared several years *before* the bulk of the IQ studies were published.

"Such a cavalier neglect of the primary literature is even more inexcusable since a joint conference was held by the International Society for Fluoride Research and the Fluoride Action Network on this very subject at the Mississauga campus of the University of Toronto, over a year before the 2009 Health Canada report was released. Moreover, a press conference at which the significance of the eighteen of twenty-three studies on fluoride and IQ that have been translated into English, was discussed by scientists attending the conference, and received national major media coverage."

[Eleanor Weiss commenting:] In the large quote above, " the 2008 expert panel" is mentioned. From page 242: "The panelists for this Health Canada review were perhaps the most biased that could have been selected."

25. A Response to Pro-Fluoridation Claims, 246

[Page 250] "Only about 400 million people worldwide drink fluoridated water, and most of them live in North America."

26. The Promoters' Motivations, 258
Review and Conclusion, 269

[Page 269-273] [Eleanor Weiss commenting:] In the review and conclusion section, this book's authors express their professional opinions regarding fluoridation, and the political maneuvering which has kept fluoridation in effect for sixty years, without appropriate studies relating to safety and effectiveness.

Here below are the author's conclusion headings quoted - see the book for an explanatory paragraph for each conclusion heading:

- *Fluoridation is a very bad medical practice*
- *Fluoridation defies medical ethics*
- *Fluoridation defies common sense*
- *None of the agencies of the U.S. Department of Health and Human Services, or any other U.S. federal agency, accepts responsibility for the safety of fluoridation*
- *The FDA has never approved fluoride for ingestion [EW: Important!]*
- *Fluoride has never been subjected to rigorous, randomized clinical trials*
- *Fluoridation's benefits have been wildly exaggerated*
- *Bottle-fed babies are at risk*
- *U.S. children are being overexposed to fluoride*
- *There is no margin of safety*
- *Fluoridation continues because its promoters have power and prestige*
- *Fluoridation started at a time when scientists and government officials held a very optimistic view about the safety of chemicals used in many products*
- *There is some evidence that fluoridation was started for reasons of political and corporate financial expediency*
- *Fluoridation was a huge gamble from the very beginning*
- *Absence of study does not mean absence of harm [EW: !]*
- *Any slight benefit from fluoridation must be judged against the risk of harm*
- *Bones are not protected from lifelong exposure [EW: Accumulation is often ignored]*
- *The precautionary principle should be applied*
- *Endorsements don't constitute scientific inquiry [EW: !]*

- *Fluoridation is experimentation on humans without their informed consent*
- *Governments are trying to protect their credibility*
- *The 2006 National Research Council review is a beginning*
- *There are better ways to fight tooth decay*

Appendix 1: Fluoride and the Brain, 275

Appendix 2: Fluoride and the Bone, 287

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Paul Connett obtained his bachelor's degree from Cambridge, England, and his PhD in chemistry from Dartmouth College in the United States. He retired from full professorship at St. Lawrence University in Canton, New York, in May 2006. He is currently director of the Fluoride Action Network. His specialty at St. Lawrence was environmental chemistry and toxicology. For twenty-five years, he has been involved in waste management, an issue that has led him to give over two thousand pro bono presentations in forty-nine U.S. states and fifty-two other countries. In 2010, he gave two presentations on *Zero Waste and Sustainability* to the United Nations Commission for Sustainable Development in New York City. At the urging of his wife, Ellen, he began researching the issues of fluoride's toxicity and the water fluoridation debate in July 1996. Before professor Connett began reading the literature on fluoride, he had accepted the prevailing American perception that people opposed to fluoridation were scientifically ill informed. After fourteen years of reviewing the primary literature his perception has dramatically changed. Paul and Ellen Connett were included in *American Environmental Leaders from Colonial Times to the Present* by Anne Becher and Joseph Richey (Grey House Publishing, 2008)

James S. Beck, who holds doctorates in medicine (Washington University School of Medicine, St. Louis, Missouri) and biophysics (University of California, Berkeley,) was urged nine years ago to look at the issue of fluoridation in the city of Calgary, Canada, by a family physician who opposed it. He was appalled at the ethics of the practice, joined a small committee of one physician and five dentists trying to stop fluoridation in the city, and began a study of scientific literature on fluoride's purported efficacy as a preventative of caries, and on its myriad toxicities. He has lobbied city councils and engage in public debate since. He is currently professor emeritus of medical biophysics at the University of Calgary, Canada.

H. Spedding Micklem is an emeritus professor in the School of Biological Sciences, University of Edinburgh, UK. He graduated DPhil from the University of Oxford and worked on the scientific staff of the Medical Research Council at Harwell for eight years before moving to the Department of Zoology at Edinburgh, where he engaged in teaching and research for twenty-five years, publishing mainly in the fields of stem cell biology and immunology. He held visiting research fellowships for several periods at l'Institut Pasteur in Paris,

Stanford University, and New York University School of Medicine. He became interested in fluoride about seven years ago and soon realized that fluoridation of the public water supply was not the sensible public health measure that he had always supposed.

Comments on the back cover:

"Sweden rejected fluoridation in the 1970s, and in this excellent book these three scientists have confirmed the wisdom of that decision. Our children have not suffered greater tooth decay, as the World Health Organization figures attest, and in turn our citizens have not borne the other hazards fluoride may cause."

-- DR. ARVID CARLSSON, Nobel Laureate in Medicine or Physiology (2000)

"Alfred North Whitehead said the scientific method means leaving 'options open for revision.' An ancient Roman adage says that 'whatever touches all must be approved by all.' These characterizations of science and democracy are the reasons for reading this book. Especially if you and your family are drinking administratively mandated fluoridated water."

-- RALPH NADER