

# Appendix B

## LACK OF FLUORIDATION'S EFFECTIVENESS:

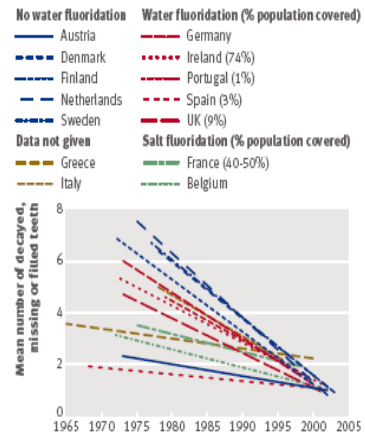
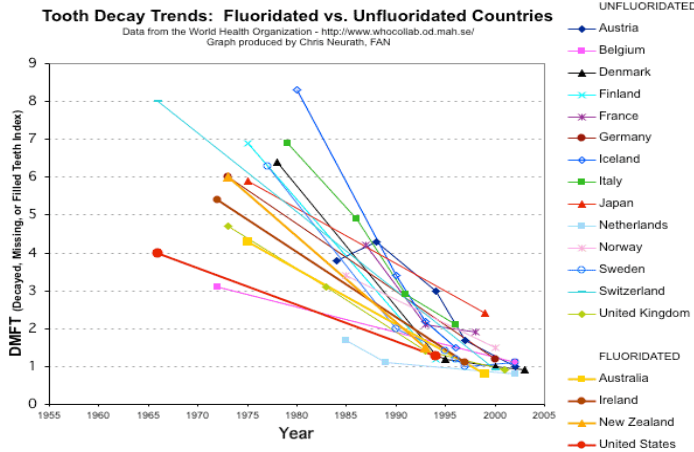
There is no government scientific department(s), or agency with oversight responsibility for the efficacy, safety, total exposure, or ethics of fluoridation. If we think the financial sector lacked government oversight and accountability, resulting in a current banking crisis, the scientific side of health care has a similar lack of oversight and is resulting in a crisis for some aspects of our health care system. Fluoridation is an unregulated aspect of healthcare, which will one day be viewed as one of the 10 greatest public health blunders of the 20<sup>th</sup> Century.

1. Current scientific literature is generally finding little or no effectiveness from fluoridation.<sup>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19</sup> Studies finding benefit are frequently historical and flawed for lack of controlling confounding factors and basic statistics.<sup>20 21 22</sup> The NIH (National Institute of Health) and Surgeon General's report suggest efficacy estimates based on randomized controlled trials under ideal circumstances are best; however, no one disputes that in the case of fluoridation those types of studies would be difficult and have never been done. Therefore, a greater degree of caution and margin of safety must be used to protect public health than with most drugs.

In 2007 Pizzo et al reported a review of original fluoridation articles from 2001 to 2006 and found ". . . it is now accepted the primary cariostatic action of fluoride occurs after tooth eruption. Moreover, the caries reduction directly attributable to water fluoridation have declined in the last decades. . . whereas enamel fluorosis has been reported as an emerging problem in fluoridated areas. Several studies conducted in fluoridated and non-fluoridated communities suggested that this method of delivering fluoride may be unnecessary for caries prevention."<sup>23</sup>

2. After 60 years of fluoridation, we should be able to detect the effectiveness of fluoridation. Current effectiveness studies concur that there appears to be little or no detectable benefit from fluoridation.<sup>24 25 26 27 28 29 30 31 32 33 34</sup> As reflected in the two graphs below, regardless of fluoridation all developed countries have reduced dental decay to similar low levels. Therefore, suggestions that the ubiquitous halo effect benefits neighboring communities<sup>35</sup> are flawed.

Graphs A and B<sup>36</sup> show the decline of decay over several decades. Regardless of whether the country has fluoridated water, fluoridated salt, or no fluoridated products, decay rates are similar. Clearly, other factors (such as socioeconomics) are more relevant than fluoridation.

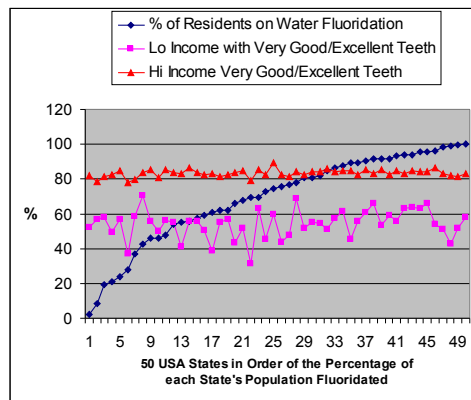
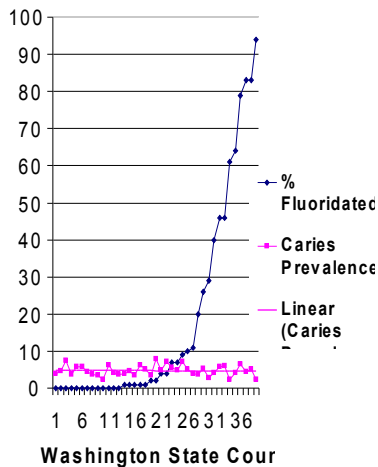


Graph A

Graph B

3. Lourox in 1996<sup>37</sup> reported data on counties in Washington State (Graph C - was not drawn by the author). With 46% of public water users fluoridated, no significant reduction in dental decay could be detected in the fluoridated areas. In spite of the lack of fluoridation's benefit, the Department of Health and other Public Health officials aggressively promoted fluoridation. As of 2008, 59% of public water users in Washington State are fluoridated.

dfs+DFS Caries Prevalence  
% of people Fluoridated



## Graph C

## Graph D

4. Ranking 50 US states based on the percentage of residents receiving fluoridation (ascending line Graph D) and plotting the low income segment of the population reporting very good/excellent teeth (lower horizontal line Graph D) and the high income segment reporting very good to excellent teeth (upper horizontal line Graph D), finds about 53% of the poor and 82% of the wealthy have very good to excellent teeth regardless of fluoridation. A state could fluoridate zero or 100% of their population without change to decay incidence.<sup>38 39 40 41</sup>

a. "It is remarkable... that the dramatic decline in dental caries which we have witnessed in many different parts of the world has occurred without the dental profession being fully able to explain the relative role of fluoride in this intriguing process."<sup>42</sup>

b. "A very marked decline in caries prevalence [in Europe] was seen in children and adolescents... The number of edentulous adults in Europe has also been declining considerably."<sup>43</sup> 99% of Europe is fluoridation free and limited use of fluoride salts.

c. "The caries attack rate in industrialized countries, including the United States and Canada, has decreased dramatically over the past 40 years." (regardless of fluoridation).<sup>44</sup>

d. "Since the 1960s and 70s, however, a continuous reduction (in tooth decay) has taken place in most 'westernized' countries, it is no longer unusual to be caries-free.. . It is difficult to get a full picture of what has happened, as the background is so complex and because so many factors may have been involved both directly and indirectly. In fact, no single experimental study has addressed the issue of the relative impact of all possible factors, and it is unlikely that such a study can ever be performed."<sup>45</sup>

e. "Caries prevalence data from recent studies in all European countries showed a general trend towards a further decline for children and adolescents. . . The available data on the use of toothbrushes, fluorides and other pertinent items provided few clues as to the causes of the decline in caries prevalence."<sup>46</sup>

5. The Centers for Disease Control promotes substances, "markets", advises, recommends, collects data, but does not determine the safety, efficacy, toxicology, exposure, dosage, or ethics of substances. The CDC promotes fluoride as a "major factor in the overall decline in recent decades in the prevalence and severity of dental caries in the United States and other economically developed countries."<sup>47</sup> For this alleged multinational effectiveness, the CDC repeatedly uses historical references. A repeated CDC reference is the "anecdotal" historical report of Bratthall et al. 1996, which questioned a group of experts for their opinion on "*Reasons for the caries decline: what do the experts believe?*" "A main finding of our study was that there was a very large variation in how the experts graded the impact of various possible factors. In fact, only in the evaluation of "fluoride toothpaste" was there a clear, positive agreement among experts."<sup>48</sup> The CDC's claim that fluoridation is one of the ten greatest public health achievements of the 20<sup>th</sup> Century is not supported by the CDC's own listed reference. In fact, a review of original studies in 2007 by Pizzo et al found fluoridation in industrialized communities unnecessary.<sup>49</sup> The Washington Department of Health does not determine

the safety of fluoridation and relies on other agencies, none of which determine the safety and efficacy of fluoridation.

The CDC admits “there are no randomized, double-blind, controlled trials of water fluoridation.” The CDC further references historical studies conducted from 1945 through the early 1980s which contained significant flaws, such as failing to control for confounding factors of delayed tooth eruption, differences in socioeconomics, race, and/or lack of statistical significance.<sup>50</sup> (See Section V, for Risks)

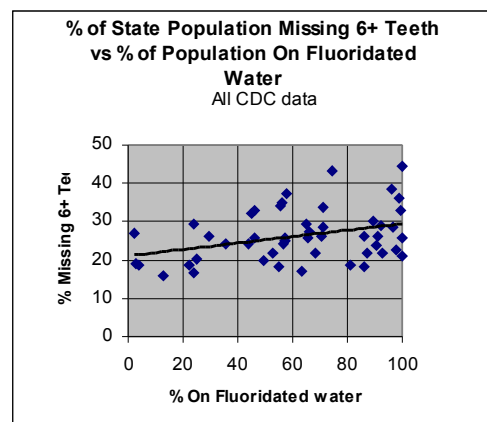
6. The International Academy of Oral Medicine and Toxicology reports “no discernible health benefit with fluoridation.”<sup>51</sup> Many good scientists are opposed to fluoridation.<sup>52</sup> The Environmental Protection Agency scientists through their union have said fluoridation no longer reduces tooth decay, if it ever did.

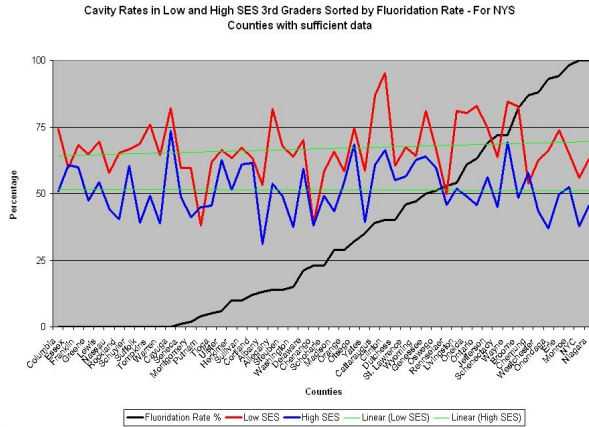
7. Cessation of fluoridation has not been shown to usually result in an increase in dental decay.<sup>53</sup> The CDC claims, “When fluoridation is withdrawn and there are few other fluoride exposures, the prevalence of caries increases” however, the CDC’s own references do not accurately support the CDC’s unqualified statement. For example, the CDC reference “In spite of discontinued water fluoridation, no indication of an increasing trend of caries could be found in Kuopio”.<sup>54</sup>

8. In some places the CDC, IOM (Institute of Medicine), and NRC (National Research Council) suggest potential benefits from fluoridation would be during the development of the tooth up to eight years of age. The level of fluoride in saliva is so minor as to have minimal effect on oral bacteria. Researchers report the potential cariostatic benefit from fluoride is “topical and not systemic.”<sup>55</sup> When carefully evaluated, the CDC comments are clearly conflicting and not in agreement with current published studies.

9. Current epidemiological effectiveness comparisons<sup>56 57 58</sup> between Washington State with 59% of the population receiving fluoridated water and Oregon’s 19%<sup>59</sup> find Oregon having similar or better dental health with a third the percentage of population fluoridated (confounding factors similar or in Washington’s favor).<sup>60 61</sup>

10. Comparing counties in New York State (Graph E) finds no detectable benefit from fluoridation (blue line is low socioeconomic residents, the red line is high, and the black line is the percentage of people in each county on fluoridated water).





Graph E

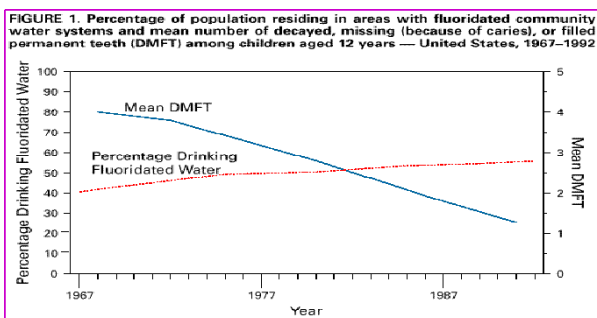
Graph F

11. Ranking states on the increasing percentage of population fluoridated finds an increasing trend in the percentage of individuals with six or more teeth missing.<sup>62</sup> (Graph F) Certainly if fluoridation reduced tooth loss, we would expect the opposite to occur.

12. Proponents suggest “studies prove water fluoridation continues to be effective in reducing tooth decay by 20-40%”<sup>63</sup> when in fact biostatisticians find the same studies show no significant benefit.<sup>64</sup>

Part of the support for the alleged effectiveness from fluoridation is the graph and references below.<sup>65</sup> The numbers are not disputed; however, the two events are not related because:

- a. Communities with or without fluoridation have decreased DMFT (decayed, missing, or filled teeth) to similar levels and show a similar decline.
- b. It is statistically improbable - if not impossible - for a random 17% increase of population to be treated, resulting in a 70% drop in incidence for the entire population. To achieve those stunning results, fluoridation projects would have had to target specific high-risk individuals rather than random communities.



Sources:

1. CDC. Fluoridation census 1992. Atlanta, Georgia: US Department of Health and Human Services, Public Health Service, CDC, National Center for Prevention Services, Division of Oral Health, 1993.
2. National Center for Health Statistics. Decayed, missing, and filled teeth among youth 12-17 years—United States. Rockville, Maryland: US Department of Health, Education, and Welfare, Public Health Service, Health Resources Administration, 1974. Vital and health statistics, vol 11, no. 144. DHEW publication no. (HRA)75-1626.
3. National Center for Health Statistics. Decayed, missing, and filled teeth among persons 1-74 years—United States. Hyattsville, Maryland: US Department of Health and Human Services, Public Health Service, Office of Health Research, Statistics, and Technology, 1981. Vital and health statistics, vol 11, no. 223. DHEW publication no. (PHS)81-1673.
4. National Institute of Dental Research. Oral health of United States children: the National Survey of Dental Caries in U.S. School Children, 1986-1987. Bethesda, Maryland: US Department of Health and Human Services, Public Health Service, National Institutes of Health, 1989. NIH publication no. 89-2247.
5. CDC, unpublished data, third National Health and Nutrition Examination Survey, 1988-1994.

It is not unreasonable to consider whether two events are related, but it is unreasonable for police powers to continue after 50 years to be used to force medication without evidence for effectiveness.

13. Cost of dental treatment is not lower in fluoridated communities.<sup>66</sup> Certainly if fluoridation were to reduce dental decay by 15-40% as some claim, the cost for dental treatment should be lower.

<sup>1</sup> <http://www.slweb.org/colquhoun.html> and [www.ada.org](http://www.ada.org)

<sup>2</sup> "Fluorosis prevalence increased significantly with higher water fluoride levels; however, caries prevalence did not decline significantly." Hong L, Levy S, Warren J, Broffitt B. (2006). Dental caries and fluorosis in relation to water fluoride levels. *ADEA/AADR/CADR Conference*, Orlando Florida, March 8-11, 2006.

<sup>3</sup> "No fluoride, socioeconomic status or beverage variables were significantly associated with lesion progression." Warren JJ, Levy SM, Broffitt B, Kanellis MJ. (2006). Longitudinal study of non-cavitated carious lesion progression in the primary dentition. *Journal of Public Health Dentistry* 66(2):83-7.

<sup>4</sup> "In the present study, fluoridated water did not seem to have a positive effect on dental health, as it might have been expected in a community with the respective caries prevalence." Meyer-Lueckel H, et al. (2006). Caries and fluorosis in 6- and 9-year-old children residing in three communities in Iran. *Community Dentistry and Oral Epidemiology* 34:63-70

<sup>5</sup> "The WHO data do not support fluoridation as being a reason for the decline in dental decay in 12 year olds that has been occurring in recent decades." Neurath C. (2005). Tooth decay trends for 12 year olds in nonfluoridated and fluoridated countries. *Fluoride* 38:324-325

<sup>6</sup> "Our analysis shows no convincing effect of fluoride-intake on caries development." Komarek A, et al. (2005). A Bayesian analysis of multivariate doubly-interval-censored dental data. *Biostatistics* 6:145-55.

<sup>7</sup> "Levels in fluoridated and non-fluoridated areas were similar." Harding MA, et al. (2003). Dental erosion in 5-year-old Irish school children and associated factors: a pilot study. *Community Dental Health* 20(3):165-70.

<sup>8</sup> "There was no statistically significant difference between DMFT in municipalities of the same size, regardless of the presence or absence of fluoride in the water supply..." Sales-Peres SH, Bastos JR. (2002). [An epidemiological profile of dental caries in 12-year-old children residing in cities with and without fluoridated water supply in the central western area of the State of Sao Paulo, Brazil]. *Cadernos de Saude Publica* 18: 1281-8

<sup>9</sup> "Water fluoridation status of the children's area of residence did not have a significant effect on Early Childhood Caries (ECC) at the 0.1 level of significance in the unadjusted logistic regression analysis, nor was it found to be a confounder of the effect of race/ethnicity on ECC prevalence in the multivariable model." Shiboski CH, et al. (2003). The association of early childhood caries and race/ethnicity among California preschool children. *Journal of Public Health Dentistry* 63(1):38-46

<sup>10</sup> "[E]ven a longitudinal approach did not reveal a lower caries occurrence in the fluoridated than in the low-fluoride reference community." Seppa L. et al. (2002). Caries occurrence in a fluoridated and a nonfluoridated town in Finland: a retrospective study using longitudinal data from public dental records. *Caries Research* 36: 308-314

<sup>11</sup> "The magnitude of [fluoridation's] effect is not large in absolute terms, is often not statistically significant and may not be of clinical significance." 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*

<sup>12</sup> "[R]esults of recent large-scale studies in at least three countries show that, when similar communities are compared and the traditional DMFT index of dental caries is used, there is no detectable difference in caries prevalence. This has been demonstrated for schoolchildren in the major cities of New Zealand, Australia, the US and elsewhere." Diesendorf, M. et al. (1997). New Evidence on Fluoridation. *Australian and New Zealand Journal of Public Health*. 21: 187-190

<sup>13</sup> "Higher fluoride proportions appeared to be associated with lower dfs + DFS, with an estimated difference between fluoridated and non-fluoridated groups of 0.65 decayed or filled surfaces per child, but this association was not statistically significant. The effects of fluoridation on the other outcomes were small and not statistically significant." Domoto P, et al. (1996). The estimation of caries prevalence in small areas. *Journal of Dental Research* 75:1947-56

<sup>14</sup> "Children attending centers showed no significant differences (in baby bottle tooth decay) based on fluoride status for the total sample or other variables." Barnes GP, et al. (1992). Ethnicity, location, age, and fluoridation factors in baby bottle tooth decay and caries prevalence of head start children. *Public Health Reports* 107: 167-73

<sup>15</sup> "The fluoride incorporated developmentally – that is, systemically into the normal tooth mineral – is insufficient to have a measurable effect on acid solubility." Featherstone JDB, M.Sc., Ph.D., Cover Story; *J American Dental Association*, Vol. 131, July 2000, p. 890.

<sup>16</sup> Centers for Disease Control; *MMWR Weekly Report*. 1999;48:933-940. "Fluoride's caries-preventive properties initially were attributed to changes in enamel during tooth development because of the association between fluoride and cosmetic changes in enamel and a belief that fluoride incorporated into enamel during tooth development would result in a more acid-resistant mineral. However, laboratory and epidemiologic research suggests that fluoride prevents dental caries predominately after eruption of the tooth into the mouth, and its actions primarily are topical for both adults and children."

<sup>17</sup> "It is no longer acceptable to use fluoride supplements on large populations, even if the caries rate is higher than average." Limeback H. "A re-examination of the pre-eruptive and post-eruptive mechanism of the anticaries effects of fluoride: is there any anti-caries benefit from swallowing fluoride?" *Community Dentistry and Oral Epidemiology* 27: 62-71, 1999.

<sup>18</sup> "In 1970, during a meeting in Switzerland on fluoride research, I was astounded to hear the statement from a European cariologist of great reputation that the mechanism of action of fluoride against dental caries was entirely topical! At that time I believed, along with the majority of American caries researchers, that fluoride worked because it became incorporated into enamel – especially developing enamel – to increase its resistance to acid demineralization. We thought that where this could not be accomplished preeruptively by water fluoridation, we ought to try to achieve the same goal posteruptively by short-term regimens of very high-concentration fluoride solutions and gels. I thought that my European colleague was very poorly informed. Now, twelve years later, I continue to be impressed by the wisdom of his assertion. Probably it was not completely correct; absolute statements about biological processes rarely are. However, each year since then the evidence has continued to accumulate to support the hypothesis that the anti-caries mechanism of fluoride is *mainly* a topical one."

<sup>19</sup> "As a direct consequence any method which places particular emphasis on incorporation of bound fluoride into dental enamel during formation may be of limited value. Therefore, there is limited scientific data to support the assertion that systemic fluoride treatment should be initiated from shortly after birth." Fejerskov O. et al. "Rational use of fluorides in caries prevention". *Acta Odontol. Scand*. 1981, 39:241-249.

<sup>20</sup> Fejerskov O. et al. "Rational use of fluorides in caries prevention". *Acta*

<sup>21</sup> "As a direct consequence any method which places particular emphasis on incorporation of bound fluoride into dental enamel during formation may be of limited value. Therefore, there is limited scientific data to support the assertion that systemic fluoride treatment should be initiated from shortly after birth." Fejerskov O. et al. "Rational use of fluorides in caries prevention". *Acta Odontol. Scand*. 1981, 39:241-249.

<sup>22</sup> Confounding factors such as delay in tooth eruption are not included in studies. See Komarek A, et al. *Biostatistics*. 2005 Jan;6

<sup>23</sup> McDonagh, M., P. et al 2000a. A Systematic Review of Public Water Fluoridation. NHS Centre for Reviews and Dissemination, U. of NY

<sup>24</sup> Leroy R, et al. (2003). The effect of fluorides and caries in primary teeth on permanent tooth emergence. *Community Dentistry and Oral Epidemiology* 31(6):463-70

<sup>25</sup> Pizzo G, Piscopo MR, Picco I, Giuliani G., Community water fluoridation and caries prevention: a critical review. *Clin Oral Inve*. 2007 Feb.

<sup>26</sup> "The aim of this paper is to review publications discussing the declining prevalence of dental caries in the industrialized countries during the past decades... [T]here is a general agreement that a marked reduction in caries prevalence has occurred among children in most of the developed countries in recent decades."

SOURCE: Petersson GH, Bratthall D. (1996). The caries decline: a review of reviews. *European Journal of Oral Science* 104: 436-43"

<sup>27</sup> "The regular use of fluoridated toothpastes has been ascribed a major role in the observed decline in caries prevalence in industrialized countries during the last 20 to 25 years, but only indirect evidence supports this claim." Haugejorden O. (1996). Using the DMF gender difference to assess the "major" role of fluoride toothpastes in the caries decline in industrialized countries: a meta-analysis. *Community Dentistry and Oral Epidemiology* 24: 369-75

- <sup>26</sup> "The marked caries reduction in many countries over the last two decades is thought to be mainly the result of the widespread and frequent use of fluoride-containing toothpaste... There seem to be no other factors which can explain the decline in dental caries, which has occurred worldwide during the same period, in geographic regions as far apart as the Scandinavian countries and Australia/New Zealand." Rolla G, Ekstrand J. (1996). *Fluoride in Oral Fluids and Dental Plaque*. In: Fejerskov O, Ekstrand J, Burt B, Eds. *Fluoride in Dentistry*, 2nd Edition. Munksgaard, Denmark. p 215
- <sup>27</sup> "Although difficult to prove, it is reasonable to assume that a good part of the decline in dental caries over recent years in most industrialized countries, notably those Northern European countries without water fluoridation, can be explained by the widespread use of fluoride toothpastes. This reduction in caries has not been paralleled by a reduction in sugar intake..." Clarkson BH, Fejerskov O, Ekstrand J, Burt BA. (1996). *Rational Use of Fluoride in Caries Control*. In: Fejerskov O, Ekstrand J, Burt B, Eds. *Fluoride in Dentistry*, 2nd Edition. Munksgaard, Denmark. p 354
- <sup>28</sup> "During the past 40 years dental caries has been declining in the US, as well as in most other developed nations of the world... The decline in dental caries has occurred both in fluoride and in fluoride-deficient communities, lending further credence to the notion that modes other than water fluoridation, especially dentifrices, have made a major contribution." Leverett DH. (1991). Appropriate uses of systemic fluoride: considerations for the '90s. *Journal of Public Health Dentistry* 51: 42-7
- <sup>29</sup> "In most European countries, the 12-year-old DMFT index is now relatively low as compared with figures from 1970-1974. WHO (World Health Organization) data relating to availability of fluoride in water and toothpaste appear reliable. However, these data did not explain differences between countries with respect to the DMFT index of 12-year-olds." Kalsbeek H, Verrips GH. (1990). Dental caries prevalence and the use of fluorides in different European countries. *Journal of Dental Research* 69(Spec Iss): 728-32
- <sup>30</sup> "The most striking feature of some industrialized countries is a dramatic reduction of the prevalence of dental caries among school-aged children." Binus W, Lowinger K, Walther G. (1989). [Caries decline and changing pattern of dental therapy] [Article in German] *Stomatol DDR* 39: 322-6
- <sup>31</sup> "The current reported decline in caries tooth decay in the US and other Western industrialized countries has been observed in both fluoridated and nonfluoridated communities, with percentage reductions in each community apparently about the same." Heifetz SB, et al. (1988). Prevalence of dental caries and dental fluorosis in areas with optimal and above-optimal water-fluoride concentrations: a 5-year follow-up survey. *Journal of the American Dental Association* 116: 490-5"
- <sup>32</sup> "(D)uring the period 1979-81, especially in western Europe where there is little fluoridation, a number of dental examinations were made and compared with surveys carried out a decade or so before. It soon became clear that large reductions in caries had been occurring in unfluoridated areas. The magnitudes of these reductions are generally comparable with those observed in fluoridated areas over similar periods of time." Diesendorf, D. (1986). The Mystery of Declining Tooth Decay. *Nature* 322: 125-129
- <sup>33</sup> "Even the most cursory review of the dental literature since 1978 reveals a wealth of data documenting a secular, or long term, generalized decline in dental caries throughout the Western, industrialized world. Reports indicate that this decline has occurred in both fluoridated and fluoride-deficient areas, and in the presence and absence of organized preventive programs." Bohannon HM, et al. (1985). Effect of secular decline on the evaluation of preventive dentistry demonstrations. *Journal of Public Health Dentistry* 45: 83-89
- <sup>34</sup> "The decline in caries prevalence in communities without fluoridated water in various countries is well documented. The cause or causes are, at this time, a matter of speculation." Leverett DH. (1982). Fluorides and the changing prevalence of dental caries. *Science* 217: 26-30
- <sup>35</sup> <http://www.cdc.gov/fluoridation/benefits.htm> The Halo Effect: Quantifying the diffused benefit from water fluoridation in the United States Griffin SO, Gooch BF, Lockwood SA, Tomar SL. *Community Dent Oral Epidemiol* 2001;29:120-129.
- <sup>36</sup> "Graphs of tooth decay trends for 12 year olds in 24 countries, prepared using the most recent World Health Organization data, show that the decline in dental decay in recent decades has been comparable in 16 non-fluoridated countries and 8 fluoridated countries which met the inclusion criteria of having (i) a mean annual per capita income in the year 2000 of US\$10,000 or more, (ii) a population in the year 2000 of greater than 3 million, and (iii) suitable WHO caries data available. *The WHO data do not support fluoridation as being a reason for the decline in dental decay in 12 year olds that has been occurring in recent decades.*" Neurath 2005. (Graph A) British Medical Journal published a similar graph and report in 2007. (Graph B)
- <sup>37</sup> Leroux, et al Univ. WA, J Dent Res 1996
- <sup>38</sup> National Survey of Children's Health. <http://mchb.hrsa.gov/oralhealth/portrait/1cct.htm>.
- <sup>39</sup> [http://www.cdc.gov/oralhealth/waterfluoridation/fact\\_sheets/states\\_stats2002.htm](http://www.cdc.gov/oralhealth/waterfluoridation/fact_sheets/states_stats2002.htm)
- <sup>40</sup> The National Survey of Children's Health 2003. Rockville, Maryland: U.S. Department of Health and Human Services, 2005
- <sup>41</sup> U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau
- <sup>42</sup> Aoba T, Fejerskov O. (2002). Dental fluorosis: chemistry and biology. *Critical Review of Oral Biology and Medicine* 13: 155-70
- <sup>43</sup> Reich E. (2001). Trends in caries and periodontal health epidemiology in Europe. *International Dentistry Journal* 51(6 Suppl 1):392-8
- <sup>44</sup> Fomon SJ, Ekstrand J, Ziegler EE. (2000). Fluoride intake and prevalence of dental fluorosis: trends in fluoride intake with special attention to infants. *Journal of Public Health Dentistry* 60: 131-9"
- <sup>45</sup> "Since the 1960s and 70s, however, a continuous reduction (in tooth decay) has taken place in most 'westernized' countries, it is no longer unusual to be caries-free... During the decades of caries decline, a number of actions have been taken to control the disease, and the literature describes numerous studies where one or several factors have been evaluated for their impact. Still, it is difficult to get a full picture of what has happened, as the background is so complex and because so many factors may have been involved both directly and indirectly. In fact, no single experimental study has addressed the issue of the relative impact of all possible factors, and it is unlikely that such a study can ever be performed." Bratthall D, Hansel-Petersson G, Sundberg H. (1996). Reasons for the caries decline: what do the experts believe?" *European Journal of Oral Science* 104:416-22
- <sup>46</sup> "Caries prevalence data from recent studies in all European countries showed a general trend towards a further decline for children and adolescents...The available data on the use of toothbrushes, fluorides and other pertinent items provided few clues as to the causes of the decline in caries prevalence." Marthaler TM, O'Mullane DM, Vrbic V. (1996). The prevalence of dental caries in Europe 1990-1995. ORCA Saturday afternoon symposium 1995. *Caries Research* 30: 237-55
- <sup>47</sup> <http://www2.nidcr.nih.gov/sgr/sgrohweb/chap7.htm>
- <sup>48</sup> The CDC also references Horowitz and Ismail 1996, Johnston 1994, Ripa 1990, Stookey and Beiswanger 1995, however all these reviewed topical application of fluoride, not the addition of fluoride to water. <http://www2.nidcr.nih.gov/sgr/sgrohweb/chap7.htm>
- <sup>49</sup> Pizzo G, et al, Community water fluoridation and caries prevention: a critical review. Clin Oral Investig. 2007 Feb 27.
- <sup>50</sup> Not one study reporting benefits of fluoridation includes the confounding factor of delay in tooth eruption caused by fluoridation. In addition: statistics based on percentages can show huge changes when actually minor effects were actually observed. For example, a drop of one less decayed tooth surface from 128 to 127 is less than one percent, however the same drop of one surface from 2 surfaces to 1 surface is exaggerated as a 50% drop in decay. In fact both are less than one percent of possible tooth surfaces.
- <sup>51</sup> [www.IAOMT.org](http://www.IAOMT.org); Kentucky fluoridated for over 50 years has the highest tooth loss of any state. 2002 CDC MMWR; [www.fortwayne.com/mld/newssentinel/7521679.htm?template=contentModules/printstory.jsp](http://www.fortwayne.com/mld/newssentinel/7521679.htm?template=contentModules/printstory.jsp) [http://www.enquirer.com/editions/2002/10/06/loc\\_special\\_report.html](http://www.enquirer.com/editions/2002/10/06/loc_special_report.html); <http://www.fluoridealert.org/f-boston.htm> [http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list\\_uids=13678102&query\\_hl=1](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=13678102&query_hl=1) [http://www.nhregister.com/site/news.cfm?newsid=14472801&BRD=1281&PAG=461&dept\\_id=517515&rfi=8&xb=kasan](http://www.nhregister.com/site/news.cfm?newsid=14472801&BRD=1281&PAG=461&dept_id=517515&rfi=8&xb=kasan)



- <sup>52</sup> A few scientists opposed to fluoridation include: Kenji Akiniwa, DDS; Phillip Allen, MD, Harvard Medical School, '54; Vinod Barot, PhD; James Beck, MD.; W. Dexter Bellamy, PhD; Miklos Bely, PhD; Shlomi Ben-Arush; Larry Bowden DMD; Laurie Brett, DDS; John Brawner, MD; Chris Bryson (author "The Fluoride Deception"); Albert Burgstahler, PhD, Editor, Fluoride, co-author, "Fluoridation: The Great Dilemma"; Adolf Butenandt (Nobel Laureate for Chemistry, 1939); Gladys Caldwell (deceased) (co-author of "Fluoridation and Truth Decay"); Noel Campbell; Arid Carlsson, PhD (Nobel Laureate in Medicine, 2000); Robert Carton, PhD, former risk assessment specialist at the US EPA; N. J. Chinoy, (deceased) (past Vice-President of the International Society for Fluoride Research); John Colquhoun, PhD (deceased); Michael Connert FAN; Paul Connert, PhD, Executive Director of the Fluoride Action Network; Ronnie Cummins, Executive Director of Organic Consumers Association; Stephen A. Dean; Lynn H. Ehrle; Nick Diemel, MD; Mark Diesendorf, PhD; Mike Dolan, PhD; Sam Epstein, MD (author of the "Politics of Cancer"); Hans von Euler-Chelpin (Nobel Laureate for Chemistry, 1929); Dr Doug. N. Everingham, Former Federal Health Minister, Australia; Fred B. Exner, MD (deceased) (co-author "The American Fluoridation Experiment"); Rich Fischer, DDS, Past President of the International Academy of Oral Medicine and Toxicology; Richard G. Foulkes, MD (former advisor of the Ministry of Health, British Columbia); Mike Godfrey, MD; Dorothy Goldin-Rosenberg, PhD; Edward Goldsmith, (former editor and publisher of The Ecologist); Anne-Lise Gotzsche (author "The Fluoride Question: Panacea or Poison?"); Barry Groves, PhD; Ella Haley, PhD; Joseph Hensley, MD (State senator from Tennessee); Walter Rudolf Hess (Nobel Laureate for Medicine, 1949); W. Robert Hetrick, PhD; Corneille Jean-François Heymans (Nobel Laureate for Medicine, 1938); Sir Cyril Norman Hinshelwood (Nobel Laureate for Chemistry, 1956); William Hirzy, PhD (Vice-President of the Union representing professionals at EPA Washington, DC, HQ.; C. Vyvyan Howard; Bob Isaacson, PhD; Antone G. Jacobson, PhD; Jackie Jacobson, PhD; Tushar Kant Joshi; Emily A. Kane, DNM, AK, author "Managing Menopause Naturally"; Jong-Chul Kim, Editor, Green Review, South Korea; Stephen M. Korol, DMD; David Kennedy, DDS, Past President IAOMT; Lennart Krook, PhD; Linda Langness, PhD; Todd Lawson DMD; Evie Lawson DO; John R. Lee, MD; Joshua Lederberg (Nobel Laureate for Medicine, 1958); Hardy Limeback, DDS, PhD; Lewis McKinley, PhD (co-author: "Fluoridation: the Great Dilemma."); Peter Mansfield, MD; William Marcus, PhD; Joseph Mercola, MD; Henry Micklem, PhD; Peter Montague, PhD, editor of Rachel's Environmental biweekly; Raul A. Montenegro, PhD; Deborah E. Moore, PhD; Jeffrey Morris, PhD; Phyllis Mullenix, PhD; William P. Murphy (deceased) (Nobel Laureate for Medicine, 1934); Tohru Murakami, DDS; Ralph Nader; Giulio Natta (Nobel Laureate for Chemistry, 1963); Pierce Noble; Bill Osmunson, DDS, MPH; Geoff Pain, PhD; Gilles Parent (co-author); Richard J. Perry, PhD; James Presley, PhD; Alan Price, PhD; Sir Robert Robinson (deceased) (Nobel Laureate for Chemistry, 1947); Perry Roehl, PhD; Paul Ruben, DDS.; Andrew Rynne, MD; Mageswari Sangaralingam; Albert Schatz (deceased) PhD (co-discoverer of streptomycin); Nikolai Semenov (deceased) (Nobel Laureate for Chemistry, 1956); Richard Shames, MD, author "Feeling Fat, Fuzzy or Frazzled?"; John Shoner, DO; Bruce Spittle; Caroline Snyder, PhD; Anna Strunecka; James B. Sumner PhD (deceased) (Nobel Laureate for Chemistry, 1946); A.K. Susheela, PhD; James Sumner PhD (deceased) (Nobel Laureate in Chemistry...); Philip Sutton, DDS (deceased) (author of "The Greatest Fraud: Fluoridation); Hugo Theorell (deceased) (Nobel Laureate for Medicine, 1955); Kathleen Thiessen, PhD; Artturi Virtanen (deceased) (Nobel Laureate for Chemistry, 1945); George Waldbott, MD (author "A Struggle with Titans;" co-author "The American Fluoridation Experiment," and co-author, "Fluoridation: The Great Dilemma"); Glen Walker, (author, "Fluoridation: Poison on Tap"); Alan Watson; Susan Willis, PhD; Mae W. Woo, DDS; John Yiamouyiannis, PhD (deceased) (author of The Aging Factor); Philip E. Zanfagna, MD (deceased) (co-author of "Fluoridation and Truth Decay"); Rudolf Ziegelbecker; Dr.techn. Rudolf Ziegelbecker, jun.; Sam Ziff, Loty Zilberman,
- <sup>53</sup> Komarek et al. A Bayesian analysis of multivariate doubly-interval-censored dental data, *Biostat.* 2005 6 pp 145-155; Armfield & Spencer, 2004 *Community Dental Oral Epidemiology*; See [www.slweb.org](http://www.slweb.org)  
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- <sup>54</sup> Kugel (sp) and Fischer 1997, Seppä et al. 1998 "In spite of discontinued water fluoridation, no indication of an increasing trend of caries could be found in Kuopio. The mean numbers of fluoride varnish and sealant applications decreased sharply in both towns between 1992 and 1995. In spite of that caries declined. CONCLUSIONS: These findings suggest that the decline of caries has little to do with professional preventive measures performed in dental clinics." and Stephen et al.
- <sup>55</sup> Pizzo G, et al, *Community water fluoridation and caries prevention: a critical review.* *Clin Oral Investig.* 2007 Feb 27.
- <sup>56</sup> [http://www.doh.wa.gov/cfh/Oral\\_Health/Documents/SmileSurvey2005FullReport.pdf](http://www.doh.wa.gov/cfh/Oral_Health/Documents/SmileSurvey2005FullReport.pdf)
- <sup>57</sup> <http://www.oregon.gov/DHS/ph/oralhealth/docs/databook.pdf#search=Oregon%20Decay%20experience>
- <sup>58</sup> BRFSS 2002 <http://www.dhs.state.or.us/dhs/ph/chs/brfs/02/orahea/dentvisi.shtml>  
<http://apps.nccd.cdc.gov/brfss/display.asp?state=WA&cat=OH&yr=2004&qkey=6610&grp=0&SUBMIT4=Go> Sample size OR 3509 and WA 12,926 2004 data
- <sup>59</sup> [http://www.cdc.gov/oralhealth/waterfluoridation/fact\\_sheets/states\\_stats2002.htm](http://www.cdc.gov/oralhealth/waterfluoridation/fact_sheets/states_stats2002.htm)
- <sup>60</sup> National Survey of Children's Health. <http://mchb.hrsa.gov/oralhealth/portrait/1cct.htm>  
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- <sup>61</sup> <http://quickfacts.census.gov/qfd/states/41000.html>
- <sup>62</sup> "Fewer fillings had been required in the nonfluoridated part of my district than in the fluoridated part." 1997 John Colquhoun PhD, DDS  
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- <sup>63</sup> [http://www.ada.org/prof/resources/positions/statements/fluoride\\_community\\_effective.asp](http://www.ada.org/prof/resources/positions/statements/fluoride_community_effective.asp) 7/13/06
- <sup>64</sup> Komarek, *Biostatistics.* 2005; NRC 2006; Spencer et al 1996; de Liefde 1998
- <sup>65</sup> CDC MMWR, October 22, 1999
- <sup>66</sup> Maupome JPHD, 2007. Data collected in 1995