

From: Sheldon Thomas
Sent: April 11, 2012 9:28 PM
To: clerks
Subject: Water fluoridation

Dear Ms. Critchley,

I have been a silent observer for a number of weeks, and am aware that the City of Windsor will soon decide whether to continue fluoridation, or to end the practice.

I'd like to provide some background information that will help councillors to understand the actual effects of fluoridation. To support fluoridation in the face of all of the risks, one must be convinced that the practice does as is advertised.

I would greatly appreciate if this document could be added to the Mayor's and to councillor agendas prior to the final debate.

Respectfully,

Sheldon Thomas
Clear Water Legacy
www.clearwaterlegacy.com
(905) 333-9203

Artificial Water Fluoridation

In a word .. Ineffective

The 65 year fluoride experiment needs to end

Prepared by: Sheldon Thomas, Principal, Clear Water Legacy
shelthomas@cogeco.ca

April 2012

Water Fluoridation is INEFFECTIVE

It is important to know the following

1. Ingested fluoride's cavity prevention benefit has never been proven
2. Cavity rates are virtually the same comparing fluoridated communities with non-fluoridated communities .. *throughout the world.*
3. Cavity rates are often lower and dental health better in non-fluoridating communities
4. Cavities are still a problem in communities that have been fluoridated for decades .. water fluoridation has not delivered the promised benefits
5. Fluoridation is not the great social equalizer. The program has failed to reduce cavities among the poor and disadvantaged where cavity rates remain high
6. Once hailed as 'Safe for All!', the risk of excessive fluoride to infants and children is now clear in warnings issued by the Centres for Disease Control (CDC) and the American Dental Association (ADA).
7. Water fluoridation was long-promoted as necessary to fortify enamel during early tooth formation (pre-eruption). Now it is accepted that any benefit from fluoride is from direct topical application to fully emerged teeth.

Pro-fluoride claim #1: Ingested fluoride protects dental enamel by allowing the saliva to continually bathe the teeth with systemic fluoride

Actual finding: Major dental researchers concede that **fluoride is ineffective** at preventing pit and fissure tooth decay, which is 85% of the tooth decay experienced by children (JADA 1984; Gray 1987; White 1993; Pinkham 1999).

The saliva 'fluoride bath' **does not protect** the chewing surfaces of teeth. Fluoride presence in saliva is so minute that its benefit anywhere in the oral cavity is questioned.

Even though the teeth are bathed 24/7 by fluoridated saliva, cavities continue to decimate the chewing surfaces of teeth.

Because fluoride is so utterly ineffective at these surfaces, dentists resort to expensive multiple applications of sealants to reduce the chances of cavities forming.

It is widely accepted today that *direct topical application* of pharmaceutical quality fluoride may help reduce cavities, but only on the smooth surfaces of teeth.

There was never a need before, and there is not any need now, to swallow fluoride with drinking water

Pro-fluoride claim #2: Water fluoridation assists in the fortifying of tooth enamel during early tooth formation (pre-eruption)

Actual finding: There is a great risk in supplying fluoridated water to infants, and fluoride's limited benefits can only be known by having a dentist apply pharmaceutical grade fluoride directly to *fully emerged* teeth.

- **"Fluoride incorporated during tooth development is insufficient to play a significant role in caries protection."**
SOURCE: Featherstone, JDB. (2000). The Science and Practice of Caries Prevention. *Journal of the American Dental Association* 131: 887-899.
- **"The case is essentially a risk-benefit issue - fluoride has little pre-eruptive impact on caries prevention, but presents a clear risk of fluorosis."**
SOURCE: Burt BA. (1999). The case for eliminating the use of dietary fluoride supplements for young children. *Journal of Public Health Dentistry* 59: 260-274.
- **"Current evidence suggests that the predominant beneficial effects of fluoride occur locally at the tooth surface, and that systemic (pre-eruptive) effects are of much less importance."**
- **"Until recently the major caries-inhibitory effect of fluoride was thought to be due to its incorporation in tooth mineral during the development of the tooth prior to eruption...There is now overwhelming evidence that the primary caries-preventive mechanisms of action of fluoride are post-eruptive through 'topical' effects for both children and adults."**
SOURCE: Featherstone JDB. (1999) Prevention and Reversal of Dental Caries: Role of Low Level Fluoride. *Community Dentistry & Oral Epidemiology* 27: 31-40.

20 other similar studies follow in Appendix A

Pro-fluoride claim #3: Artificial water fluoridation protects the teeth of the poor and the disadvantaged who cannot afford dental services.

Actual findings:

- **"The prevalence of dental caries in a population is not inversely related to the concentration of fluoride in enamel, and a higher concentration of enamel fluoride is not necessarily more efficacious in preventing dental caries."**
SOURCE: Centers for Disease Control and Prevention. (2001). Recommendations for Using Fluoride to Prevent and Control Dental Caries in the United States. *Morbidity and Mortality Weekly Report* 50(RR14): 1-42.

- "Until recently most caries preventive programs using fluoride have aimed at incorporating fluoride into the dental enamel. **The relative role of enamel fluoride in caries prevention is now increasingly questioned**, and based on rat experiments and re-evaluation of human clinical data, **it appears to be of minor importance...**"

SOURCE: Fejerskov O, Thylstrup A, Larsen MJ. (1981). Rational Use of Fluorides in Caries Prevention: A Concept based on Possible Cariostatic Mechanisms. *Acta Odontologica Scandinavica* 39: 241-249.

The worst tooth decay in the United States occurs in the poor neighborhoods of the largest cities, the vast majority of which have been fluoridated for decades.

Income level is strongest indicator of tooth decay, regardless of water fluoridation

"Low income is the single best predictor of high caries [cavity] experience in children. Analysis of data shows that the amount of tooth decay in children is inversely related to income level." American Dental Association (ADA, 2009)

In 1988, an editorial published in the Journal of Dental Research (Newbrun, 1988) reported that "About 20 to 25 percent of children are at relatively high risk of caries, despite the declining caries prevalence in the 'fluoride generation'." **The high-risk children included the poor.**

Edelstein and Douglass, 1995 : ***"Minority, low-income and under-served groups continue to experience extensive destruction in both primary and permanent teeth."***

The most recent oral health statistics (1999-2004) show a direct link with tooth decay and poverty level. For example, the incidence of caries is much higher in children from families with lower income levels:

% Caries rate for 3-5 year-olds	% Caries rate for 6-9 year-olds	% Caries rate for 13-15 year-olds	Family Income as % Federal Poverty Limit
48	68	62	<100
36	63	60	100-199
28	46	53	200-399
19	44	51	400-499
11	31	34	>500

In 2008, the U.S. Government Accountability Office (GAO) reported that **the extent of dental disease in children has not decreased**, and estimated that 6.5 million children two through 18 years of age on Medicaid suffer with untreated tooth decay (GAO, 2008).

In November 2010, the GAO reported "**high rates of dental disease and low utilization of dental services by children in low-income families**, and the challenge of finding dentists to treat them are long-standing concerns" (GAO, 2010).

Despite claims to the contrary by promoters of fluoridation, low-income children still have high rates of tooth decay even when their drinking water is artificially fluoridated.

In Georgia where fluoridation is state-mandated, 44 percent of 2 to 5-year-old Head Start children have tooth decay.

And although fluoridation is required in North Dakota, tooth decay is present in 82 percent of Native American third grade children (who are often from very low-income families) compared to 54 percent of white children .

In New York City - which is 100 percent fluoridated - 56 percent of low-socioeconomic third grade children have tooth decay, compared to 38 percent of high-socioeconomic third grade children.

Likewise, in Kentucky, with a nearly 100 percent fluoridation rate, nearly 60 percent of third grade children have experienced tooth decay, yet for nearly 35 percent of these children that decay went untreated.

West Virginia, which is 92 percent fluoridated. West Virginia's tooth decay rate is 66 percent for 15 year-olds. By the time these children graduate from high school, the proportion has increased to 84 percent.

More than 60 Oral Health Care Reports from the 50 States reaffirm that low-income people have the worst dental health.

Proponents of fluoridation would have us believe that as fluoridation rates go up, tooth decay rates will go down. But that hasn't happened.

Instead, **oral health continues to decline among children - especially those from lower income families** - and symptoms of fluoride overexposure and toxicity have increased to epidemic proportions, as evidenced by the 41 percent of adolescents aged 12-15 now afflicted with dental fluorosis. (Beltrán-Aguilar et al., 2010).

Pro-fluoride claim #4: Water fluoridation will bring about a reduction in cavities ranging between 40% and 70%

Actual finding: Cavity rates were declining worldwide before the introduction of artificial water fluoridation and have continued a steady decline. There is no proof that water fluoridation has single-handedly resulted in any cavity reductions.

Non-fluoridated communities all over the world have demonstrated the same decline in cavity rates as have been trumpeted in fluoridated communities.

Non-fluoridated communities often report lower cavity rates than fluoridated, and healthier dental assessments.

Residents in non-fluoridated communities also suffer far less dental fluorosis than those in fluoridated communities.

Fluorosis describes mottled, porous, damaged tooth enamel caused by excessive fluoride intake.

- Several studies indicate that **dental decay is coming down just as fast, if not faster, in non-fluoridated industrialized countries** as fluoridated ones (*Diesendorf, 1986; Colquhoun, 1994; World Health Organization, Online*).
- The **largest survey** conducted in the US **showed only a minute difference in tooth decay** between children who had lived all their lives in fluoridated compared to non-fluoridated communities. The difference was not clinically significant nor shown to be statistically significant (*Brunelle & Carlos, 1990*).
- "Although the prevalence of caries varies between countries, **levels everywhere have fallen greatly in the past three decades**, and national rates of caries are now universally low. This trend has occurred **regardless of the concentration of fluoride in water or the use of fluoridated salt**, and it probably reflects use of fluoridated toothpastes and other factors, including perhaps aspects of nutrition."
SOURCE: Cheng KK, et al. (2007). Adding fluoride to water supplies. *British Medical Journal* 335(7622):699-702.

14 additional studies that support this conclusion are located in Appendix B

Pro-fluoride claim #5: When communities cease water fluoridation, cavity rates will climb substantially.

Actual finding: This claim amounts to nothing more than unsubstantiated intimidation, and an attempt to frighten municipal leaders into maintaining the status quo.

It is a matter of record that a general decline in cavities was underway even before the introduction of artificial water fluoridation in the mid 40's.

Promoters of fluoridation have never proven that ingested fluoride has any impact on cavity reduction.

Study after study demonstrates the expected .. that the ending of water fluoridation will **not** result in a spike in dental cavities.

Water fluoridation cessation has two effects .. a continued decline in cavities, and a marked reduction in dental fluorosis.

- A recent Canadian study done by the dental officer of health for Toronto, (Azarpazhooh A, Stewart H. 2006) co-authored a meta-analysis of the research which compared communities still using artificial water fluoridation with communities which had stopped artificial water fluoridation (12 papers met the inclusion criteria).
North American communities that discontinued fluoridation did not experience an increase in the incidence of dental caries. **The communities which stopped artificial water fluoridation experienced a reduction in the incidence of dental caries in both absolute terms and relative to communities that continued to fluoridate their drinking water.**
- Canadian research paper (Clark et al 2006) concluded that **"Following fluoridation cessation of the public water supply, the *prevalence and severity of dental fluorosis decreased significantly.*"**
- Canadian study by Maupome et al. 2001 reported: **"The prevalence of caries (assessed in 5,927 children, grades 2, 3, 8, 9) decreased over time in the fluoridation-ended community while remaining unchanged in the fluoridated community."**
- **When fluoridation has been halted** in communities in Finland, former East Germany, Cuba and Canada, **tooth decay did not go up but continued to go down.** (Maupome et al, 2001; Kunzel and Fischer, 1997, 2000; Kunzel et al, 2000 and Seppa et al, 2000).

15 additional studies that describe fluoridation cessation are found in Appendix C
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Appendix A

Fluoride's effects are *topical*, no need to ingest

- "Although it was initially thought that the main mode of action of fluoride was through its incorporation into enamel, thereby reducing the solubility of the enamel, **this pre-eruptive effect is likely to be minor. The evidence for a post-eruptive effect**, particularly its role in inhibiting demineralization and promoting re-mineralization, **is much stronger.**"
 SOURCE: 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.
- "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."
 SOURCE: Centers for Disease Control and Prevention. (1999). Achievements in Public Health, 1900-1999: Fluoridation of Drinking Water to Prevent Dental Caries. *Morbidity and Mortality Weekly Report* 48: 933-940.
- "Recent research on the mechanism of action of fluoride in reducing the prevalence of dental caries (tooth decay) in humans shows **that fluoride acts topically** (at the surface of the teeth) and that **there is negligible benefit in ingesting it.**"
 SOURCE: Diesendorf, M. et al. (1997). New Evidence on Fluoridation. *Australian and New Zealand Journal of Public Health* 21 : 187-190.
- Major dental researchers concede that fluoride's benefits are **topical not systemic** (Fejerskov 1981; Carlos 1983; CDC 1999, 2001; Limeback 1999; Locker 1999; Featherstone 2000).
- "It is now accepted that **systemic fluoride plays a limited role in caries prevention.**"
 SOURCE: Pizzo G, Piscopo MR, Pizzo I, Giuliana G. (2007). Community water fluoridation and caries prevention: a critical review. *Clinical Oral Investigations* 11(3):189-93.
- "The major **anti-caries benefit of fluoride is topical and not systemic.**"
 SOURCE: National Research Council. (2006). Fluoride in Drinking Water: A Scientific Review of EPA's Standards. National Academies Press, Washington D.C. p 13.
- "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**" (*US Centers for Disease Control 1999, MMWR 48: 933-940*).
- "Fluoride is **most effective when used topically**, after the teeth have erupted."
 SOURCE: Cheng KK, et al. (2007). Adding fluoride to water supplies. *British Medical Journal* 335(7622):699-702.

Appendix A

- "Since the current scientific thought is that the cariostatic activity of fluoride is mainly due to its topical effects, the need to provide **systemic fluoride supplementation for caries prevention is questionable.**"
 SOURCE: European Commission. (2005). *The Safety of Fluorine Compounds in Oral Hygiene Products for Children Under the Age of 6 Years*. European Commission, Health & Consumer Protection Directorate-General, Scientific Committee on Consumer Products, September 20.
- "The results of more recent epidemiological and laboratory studies can be summarized by stating that **post-eruptive (topical) application of fluoride plays the dominant role in caries prevention.**"
 SOURCE: Hellwig E, Lennon AM. (2004). Systemic versus topical fluoride. *Caries Research* 38: 258-62.
- "Current evidence strongly suggests that **fluorides work primarily by topical means through direct action on the teeth and dental plaque.** Thus ingestion of fluoride is not essential for caries prevention."
 SOURCE: Warren JJ, Levy SM. (2003). Current and future role of fluoride in nutrition. *Dental Clinics of North America* 47: 225-43.
- "**The majority of benefit from fluoride is now believed to be from its topical, rather than systemic, effects.**"
 SOURCE: Brothwell D, Limeback H. (2003). Breastfeeding is protective against dental fluorosis in a nonfluoridated rural area of Ontario, Canada. *Journal of Human Lactation* 19: 386-90.
- "For a long time, the systemic effect of fluoride was regarded to be most important. However, **there is increasing evidence that the local effect of fluoride at the surface of the erupted teeth is by far more important.**"
 SOURCE: Zimmer S, et al. (2003). Recommendations for the Use of Fluoride in Caries Prevention. *Oral Health & Preventive Dentistry* 1: 45-51.
- "**With today's knowledge about the mechanisms of fluoride action, it is important to appreciate that, as fluoride exerts its predominant effect... at the tooth/oral fluid interface, it is possible for maximum caries protection to be obtained without the ingestion of fluorides to any significant extent.**"
 SOURCE: Aoba T, Fejerskov O. (2002). *Critical Review of Oral Biology and Medicine* 13: 155-70.
- "**Fluoride's predominant effect is post-eruptive and topical.**"
 SOURCE: Centers for Disease Control and Prevention. (2001). Recommendations for Using Fluoride to Prevent and Control Dental Caries in the United States. *Morbidity and Mortality Weekly Report* 50(RR14): 1-42.
- "Researchers are discovering that the **topical effects of fluoride** are likely to mask any benefits that ingesting fluoride might have... This has obvious implications for the use of systemic fluorides to prevent dental caries."
 SOURCE: Limeback, H. (1999). A re-examination of the pre-eruptive and post-eruptive

Appendix A

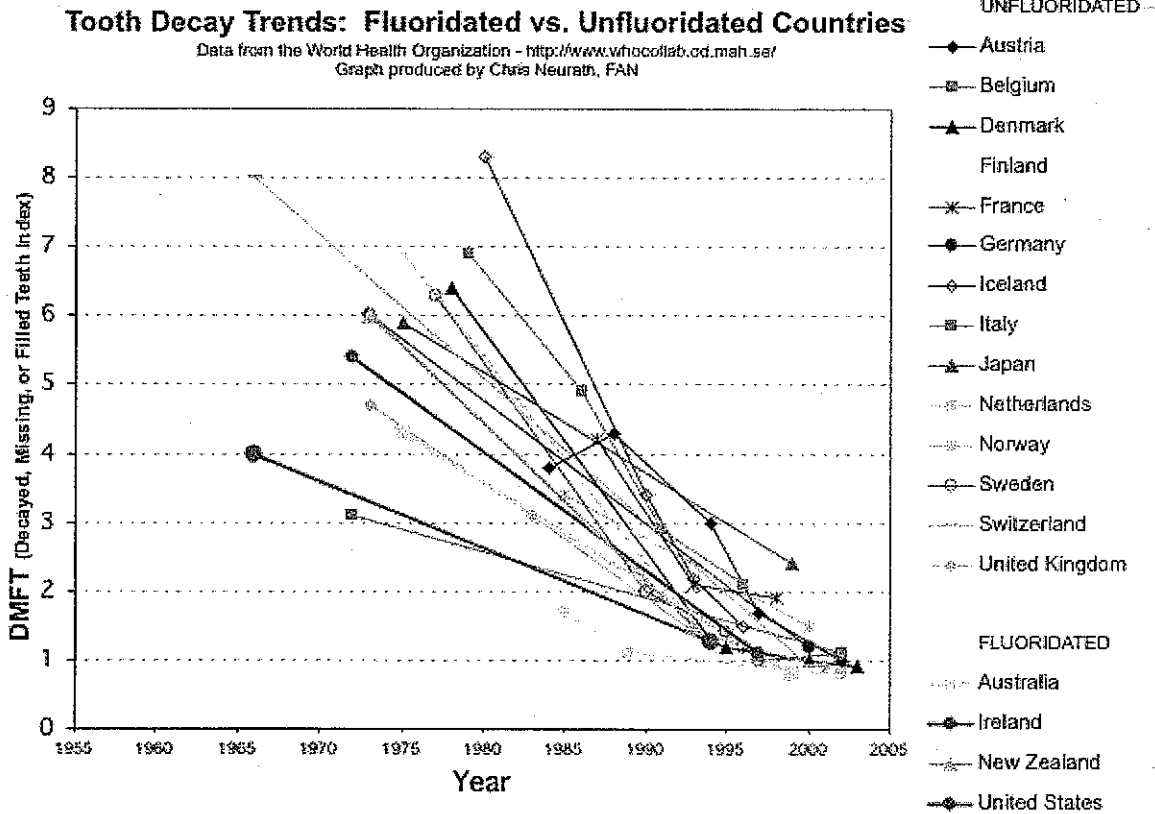
mechanism of the anti-caries effects of fluoride: is there any caries benefit from swallowing fluoride? *Community Dentistry and Oral Epidemiology* 27: 62-71.

- "Critical reviews of the evidence have led to the conclusion that the effect of fluoride in decreasing the prevalence and severity of dental caries is **not primarily systemic but exerted locally within the oral cavity..**"
SOURCE: Ekstrand J, et al. (1994). Fluoride pharmacokinetics in infancy. *Pediatric Research* 35:157-163.
- "It is now well-accepted that the primary anti-caries activity of fluoride **is via topical action.**"
SOURCE: Zero DT, et al. (1992). Fluoride concentrations in plaque, whole saliva, and ductal saliva after application of home-use topical fluorides. *Journal of Dental Research* 71:1768-1775.
- "I have argued in this paper that desirable **effects of systemically administered fluoride are quite minimal or perhaps even absent altogether.**"
SOURCE: Leverett DH. (1991). Appropriate uses of systemic fluoride: considerations for the '90s. *Journal of Public Health Dentistry* 51: 42-7.
- "It, therefore, becomes evident that a shift in thinking has taken place in terms of the mode of action of fluorides. Greater **emphasis is now placed on topical rather than on systemic mechanisms...**"
SOURCE: Wefel JS. (1990). Effects of fluoride on caries development and progression using infra-oral models. *Journal of Dental Research* 69(Spec No):626-33;

Appendix B follows

Appendix B Universal decline in cavities worldwide. Fluoridated communities show no advantage in dental decay

**World Health Organization Data (2004) -
Tooth Decay Trends (12 year olds) in Fluoridated vs. Un-fluoridated Countries**



DMFT (Decayed, Missing & Filled teeth) Status for 12 year olds by Country - World Health Organization Data (2004) -			
Country	DMFTs	Year	Status*
Germany	0.7	2005	No water fluoridation, but salt fluoridation is common
Australia	0.8	1999	More than 50% of water is fluoridated; no salt fluoridation
Denmark	0.8	2006	No water fluoridation or salt fluoridation
Netherlands	0.8	2002	No water fluoridation or salt fluoridation
Zurich,	0.9	2000	No water fluoridation, but salt

Switzerland			fluoridation is common
UK (England & Wales)	0.9	2000	11% of water supplies are fluoridated; no salt fluoridation
Austria	1.0	2002	No water fluoridation, but salt fluoridation is available to a limited extent.
Sweden	1.0	2005	No water fluoridation or salt fluoridation
Italy	1.1	2004	No water fluoridation or salt fluoridation
Belgium	1.1	2002	No water fluoridation or salt fluoridation
Ireland	1.1	1997	More than 50% of water is fluoridated; no salt fluoridation
Finland	1.2	2006	No water fluoridation or salt fluoridation
US	1.28	1992-1994	More than 50% of water is fluoridated; no salt fluoridation
Iceland	1.4	2005	No water fluoridation or salt fluoridation
New Zealand	1.7	2005	More than 50% of water is fluoridated; no salt fluoridation
Norway	1.7	2004	No water fluoridation or salt fluoridation
France	1.9	1998	No water fluoridation, but salt fluoridation is common
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			

- "In most European countries, **where community water fluoridation has never been adopted, a substantial decline in caries prevalence has been reported in the last decades**, with reductions in lifetime caries experience exceeding 75%." SOURCE: Pizzo G, et al. (2007). Community water fluoridation and caries prevention: a critical review. *Clinical Oral Investigations* 11(3):189-93.
- "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. **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.**" SOURCE: Neurath C. (2005). Tooth decay trends for 12 year olds in nonfluoridated and fluoridated countries. *Fluoride* 38:324-325.

- "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** ... the wide distribution of fluoride from toothpastes may be a major explanation .. **dental caries is not the result of fluoride deficiency.**"
 SOURCE: Aoba T, Fejerskov O. (2002). Dental fluorosis: chemistry and biology. *Critical Review of Oral Biology and Medicine* 13: 155-70.
- "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."
 SOURCE: Reich E. (2001). Trends in caries and periodontal health epidemiology in Europe. *International Dentistry Journal* 51(6 Suppl 1):392-8.
- "**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."
 SOURCE: 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
- "**There 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.
- "**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.**"
 SOURCE: 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.
- "**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."
 SOURCE: 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.
- "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..."

SOURCE: 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.

- "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 fluoridated and in non-fluoridated communities**, lending further credence to the notion that **modes other than water fluoridation, especially dentrifices, have made a major contribution.**"

SOURCE: Leverett DH. (1991). Appropriate uses of systemic fluoride: considerations for the '90s. *Journal of Public Health Dentistry* 51: 42-7.

- "The current reported **decline in caries tooth decay** in the US and other Western industrialized countries has been observed **in both fluoridated and non-fluoridated communities**, with percentage reductions in each community **apparently about the same.**"

SOURCE: 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.

- "During 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 un-fluoridated areas. **The magnitudes of these reductions are generally comparable with those observed in fluoridated areas over similar periods of time.**"

SOURCE: Diesendorf, D. (1986). The Mystery of Declining Tooth Decay. *Nature* 322: 125-129.

- "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."

SOURCE: Bohannon HM, et al. (1985). Effect of secular decline on the evaluation of preventive dentistry demonstrations. *Journal of Public Health Dentistry* 45: 83-89.

Appendix C follows

Appendix C

Additional published, peer-reviewed research that describe positive dental results after cessation of water fluoridation :

1. Burt BA, et al. 2000. The effects of a break in water fluoridation on the development of dental caries and fluorosis. *Journal of Dental Research* 79(2):761-9.
2. Clark DC, Shulman JD, Maupome G, Levy SM. 2006 Changes in Dental Fluorosis Following Cessation of Water Fluoridation. *Community Dentistry and Oral Epidemiology* Jun;34(3):197-204.
3. Kalsbeek H, Kwant GW, Groeneveld A, Dirks OB, van Eck AA, Theuns HM. 1993 Caries experience of 15-year-old children in The Netherlands after discontinuation of water fluoridation. *Caries Res.* 27(3):201-5.
4. Kobayashi S, Kawasaki K, Takagi O, Nakamura M, Fujii N, Shinzato M, Maki Y, Takaesu Y. 1992 Caries experience in subjects 18–22 years of age after 13 years' discontinued water fluoridation in Okinawa. *Community Dentistry and Oral Epidemiology.* 20(2):81-83.
5. Künzel W, Fisher T 2000 Caries prevalence after cessation of water fluoridation in La Salud, Cuba. *Caries Res* 34:20–25.
6. Kunzel W, et al. 2000. Decline in caries prevalence after the cessation of water fluoridation in former East Germany. *Community Dentistry and Oral Epidemiology* 28(5): 382-389.
7. Lekesova I, Rokytova K, Salandova M, Mrklas L 1996 Zastaveni fluoridace pitne vody v Praze. *Progresdent* 6:15-17.
8. Maupome G, et al. 2001. Patterns of dental caries following the cessation of water fluoridation. *Community Dentistry and Oral Epidemiology* 29(1): 37-47.
9. Seppa L, et al. 2000 Caries trends 1992-98 in two low-fluoride Finnish towns formerly with and without fluoride. *Caries Research* 34(6): 462-8.

Recent Reviews of Cessation Studies

11. Natick Fluoridation Committee. 1997 The Natick Report: An Analysis of Water Fluoridation. Sept 27.
12. Ziegelbecker R. Natural Water Fluoridation: Multifactorial Influences on Dental Caries in the 21 Cities Study. Abstracts. International Society for Fluoride Research, XVIIth Conference, Hotel Thermal, BUDAPEST, Hungary, June 22 - 25, 1989
13. Ziegelbecker R. Fluoridation in Europe (Letter to the Editor) *FLUORIDE*¹ August 1998;31(3):171-174.

14. Pizzo G, Piscopo M, Pizzo I, Giulliana G. 2007 Community water fluoridation and caries prevention: a critical review. *Clinical and Oral Investigations* Sep;11(3):189-193.
15. Azarpazhooh A, Stewart H. 2006 Oral Health Consequences of the Cessation of Water Fluoridation in Toronto.

end