BOARD OF HEALTH

REPORT 12-003

1:30 p.m.
April 16, 2012
Council Chambers
Hamilton City Hall

Present: Mayor B. Bratina, Chair
Councillors B. McHattie, J. Farr, B. Morelli, C. Collins, T. Jackson, S. Duvall, T. Whitehead, M. Pearson, R. Pasuta, J. Partridge

Absent with regrets: Councillor S. Merulla – City Business
Councillor B. Clark – Personal Business
Councillor B. Johnson – City Business
Councillor L. Ferguson – Personal Business
Councillor R. Power – City Business

Also Present: Dr. E. Richardson, Medical Officer of Health
Dr. C. Mackie, Associate Medical Officer of Health
Dr. N. Tran, Associate Medical Officer of Health
D. Barr-Elliott, Director; S. Brown, Healthy Living Division
R. Hall, Director; E. Mathews, Health Protection Branch
G. McArthur, Director; Clinical and Preventative Services
D. Sheehan, Director; Family Health Division
T. Bendo, Director; Planning and Business Improvement
C. Newman, Legislative Coordinator

THE BOARD OF HEALTH PRESENTS REPORT 12-003 AND RESPECTFULLY RECOMMENDS:

1. Communicable Diseases and Health Hazard Investigations Quarterly Report (Q3) (July 1, 2011 to September 30, 2011) BOH11019(b) (City Wide) (Item 5.1)

That Report BOH11019(b) respecting Communicable Diseases and Health Hazard Investigations Quarterly Report (Q3) (July 1, 2011 to September 30, 2011), be received.

2. Communicable Diseases and Health Hazard Investigations Quarterly Report (Q4) (October 1, 2011 to December 31, 2011) BOH11019(c) (City Wide) (Item 5.2)

That Report BOH11019(c) respecting Communicable Diseases and Health Hazard Investigations Quarterly Report (Q4) (October 1, 2011 to December 31, 2011), be received.

3. Water Fluoridation: New Data and Recent Developments BOH08024(c) (City Wide) (Item 7.1)

That report BOH08024(c), respecting Water Fluoridation: New Data and Recent Developments, be received.

4. Water Fluoridation: New Data and Recent Developments BOH08024(c) (City Wide) (Item 7.1)

That the General Manager of Public Works, and Legal Services, report to the Public Works Committee respecting the pending changes to the *Safe Drinking Water Act*.

FOR THE INFORMATION OF THE COUNCIL:

(a) CHANGES TO THE AGENDA (Item 1)

1. ADDED DELEGATION REQUESTS

(i) Terry Wilson respecting the social and economic problems associated with water fluoridation (Added as Item 4.10)

(ii) Peter Ormond representing the Green Party of Canada, Hamilton Centre Riding, respecting fluoridation in other jurisdictions and requesting that Hamilton remove fluoride from Hamilton's water (Added as Item 4.11)

(iii) Sheldon Thomas representing the Clean Water Legacy respecting the chemical fluorosilicic acid in the practice of water fluoridation, with specific attention to the health effects of certain contaminants that are known to accompany the fluorosilicic acid product (Added as Item 4.12)

(iv) Bob Green Innes respecting concurs of potential health and environmental hazards associated with water fluoridation (Added as Item 4.13)

(v) Tim Burton respecting how water fluoridation discriminates against those living in poverty (Added as Item 4.14)

(vi) Victoria Wondergem respecting health concerns with respect to fluoride in the City of Hamilton's water supply (Added as Item 4.15)

(vii) Gerald Cooper representing People for Safe Drinking Water respecting the safety and legality of fluoridating Hamilton's drinking water (Added as Item 4.16)

(viii) Simon J Kiss representing Wilfrid Laurier University respecting research into the politics and public options towards fluoridation in the City of Waterloo (Added as item 4.17)

2. ADDED CORRESPONDENCE WITH RESPECT TO WATER FLUORIDATION

(i) Correspondence from Mary Pearson respecting concerns with water fluoridation (Added Item 7.1(b)(viii))

3. ADDED GENERAL INFORMATION

(i) CORRESPONDENCE

(a) Ministry of Health and Long-Term Care Public Health Accountability Agreement with the City of Hamilton dated January 1, 2011 (Added Item 11.1(a)

The agenda was approved, as amended.

(b) DECLARATIONS OF INTEREST

None

(c) MINUTES (Item 3)

(i) March 5, 2012 (Item 3.1)

The minutes from the March 5, 2012 Board of Health Meeting were approved, as presented.

(d) DELEGATION REQUESTS (Item 4)

(i) Lorna Moreau respecting health concerns related to neighbourhood air quality (Item 4.1)

The delegation request by Lorna Moreau respecting health concerns related to neighbourhood air quality, was approve to speak at the May 5, 2012 meeting of the Board of Health.

(ii) Dr. Peter Cooney representing Health Canada, Office of the Chief Dental Officer, respecting Health Canada's position on water fluoridation (Item 4.2)

(iii) Dr. Ron Yarascavitch representing the Royal College of Dental Surgeons of Ontario (RCDSO), respecting the RCDSO's support of the use of fluoridation as a method for good oral health (Item 4.3)

(iv) Peter Van Caulart representing the Environmental Training Institute respecting new information regarding drinking water fluoridation (Item 4.4)

(v) Paul Connett representing the Fluoride Action Network respecting stopping water fluoridation as it unnecessary, unethical, ineffective and potentially dangerous (Item 4.5)

(vi) Anthony Matthews representing the Council of Canadians – Hamilton Chapter respecting water fluoridation in Hamilton (Item 4.6)

(vii) Dr. Raymond Ray respecting his research on water fluoridation in Europe (Item 4.7)

(viii) George Pastoric representing Hydro-Logic Environmental respecting concerns about water fluoridation in Hamilton (Item 4.8)

(ix) Heather Dawn Gingerich representing the International Medical Geology Association (Canada) respecting the presentation of recent peer-reviewed research concerning municipal water fluoridation and maternal child health outcomes (Item 4.9)

(x) Terry Wilson respecting the social and economic problems associated with water fluoridation (Added as Item 4.10)

(xi) Peter Ormond representing the Green Party of Canada, Hamilton Centre Riding, respecting fluoridation in other jurisdictions and requesting that Hamilton remove fluoride from Hamilton's water (Added as Item 4.11)

(xii) Sheldon Thomas representing the Clean Water Legacy respecting the chemical fluorosilicic acid in the practice of water fluoridation, with specific attention to the health effects of certain contaminants that are known to accompany the fluorosilicic acid product (Added as Item 4.12)

(xiii) Bob Green Innes respecting concurs of potential health and environmental hazards associated with water fluoridation (Added as Item 4.13)

(xiv) Tim Burton respecting how water fluoridation discriminates against those living in poverty (Added as Item 4.14)

(xv) Victoria Wondergem respecting health concerns with respect to fluoride in the City of Hamilton's water supply (Added as Item 4.15)

(xvi) Gerald Cooper representing People for Safe Drinking Water respecting the safety and legality of fluoridating Hamilton's drinking water (Added as Item 4.16)

(xvii) Simon J Kiss representing Wilfrid Laurier University respecting research into the politics and public options towards fluoridation in the City of Waterloo (Added as item 4.17)

a) Delegation request 4.2 through to 4.17 were approved to speak at today's meeting, as they are respecting a matter on today's agenda;

b) The delegations were renumbered 7.1(a)(iii) through 7.1(a)(xvii) respectively.

(e) CONSENT ITEMS

The following Advisory Committee meeting minutes were received:

(a) Community Food Security Stakeholder Advisory Committee meeting of October 5, 2011

(b) Community Food Security Stakeholder Advisory Committee meeting of November 2, 2011

(c) Community Food Security Stakeholder Advisory Committee meeting of December 7, 2011

(d) Community Food Security Stakeholder Advisory Committee meeting of January 4, 2012

(e) Community Food Security Stakeholder Advisory Committee meeting of February 1, 2012

(f) Community Food Security Stakeholder Advisory Committee meeting of March 7, 2012

(f) PRESENTATIONS (Item 7)

(i) Water Fluoridation: New Data and Recent Developments BOH08024(c) (City Wide) (Item 7.1)

Dr. Mackie addressed the Board with the assistance of a PowerPoint presentation. His Comments included but were not limited to the following:

Dr. Mackie indicated that Health Services (PHS) have completed a review of recent studies on water fluoridation. The results of the review continue to show that fluoridating water lowers the risk of tooth decay, and contributes to better oral health.

The Clerk retained a copy of Dr. Mackie's presentation.

Dr. Arlene King, Chief Medical Officer of Health, for the Province of Ontario, gave a presentation to the Board. Her Comments included but were not limited to the following:

Dr. King spoke to the Board respecting fluoridation as a safe, effective, economical, and equitable means of preventing dental decay.

The Clerk retained a copy of Dr. King's presentation.

The Board asked questions of the presenters. Their questions included but were not limited to the following:

The Board inquired on the safety and alternative means to delivering safe oral health. The Board expressed some concern with the polarized views on fluoridation, and the variations in available literature on the topic.

The delegation requests by Dr. Peter Cooney representing Health Canada, Office of the Chief Dental Officer, and Dr. Yarascavitch representing the Royal College of Dental Surgeons of Ontario, were reordered and permitted to speak as 7.1(a)(i) and 7.1(a)(ii) respectively.

(i)(a) Delegates respecting water fluoridation (Item 7.1(a)):

(i) Dr. Peter Cooney representing Health Canada, Office of the Chief Dental Officer, respecting Health Canada's position on water fluoridation (Item 4.2)

Dr. Cooney gave a presentation in support of water fluoridation. A copy of his presentation was retained for the record.

(ii) Dr. Ron Yarascavitch representing the Royal College of Dental Surgeons of Ontario (RCDSO), respecting the RCDSO's support of the use of fluoridation as a method for good oral health (Item 4.3)

Dr. Ron Yarascavitch gave a presentation in support of water fluoridation. A copy of his presentation was retained for the record.

At 3:10 p.m., the Board of Health lost quorum.

(iii) Shane Coleman respecting issues surrounding fluoridation of water, City of Calgary vote to remove fluoride and new information on the effects of fluoride on children (Item 7.1(a)(i))

(iv) Cindy Mayor respecting new information on water fluoridation and water fluoridation in Hamilton (Item 7.1(a)(ii))

At 3:27 p.m., the Board of Health attained quorum.

(v) Peter Van Caulart representing the Environmental Training Institute respecting new information regarding drinking water fluoridation (Item 4.4

Mr. Van Caulart was not in attendance at the meeting.

(vi) Paul Connett representing the Fluoride Action Network respecting the stopping of water fluoridation as it unnecessary, unethical, ineffective and potentially dangerous (Item 4.5)

Mr. Connett gave a presentation in opposition of water fluoridation. A copy of his presentation was retained for the record.

(vii) Anthony Matthews representing the Council of Canadians – Hamilton Chapter respecting water fluoridation in Hamilton (Item 4.6)

Mr. Matthews spoke to the Committee in opposition of water fluoridation. A copy of his speaking notes was retained for the record.

(viii) Dr. Raymond Ray respecting his research on water fluoridation in Europe (Item 4.7)

Dr. Ray was not in attendance at the meeting.

(ix) George Pastoric representing Hydro-Logic Environmental respecting concerns about water fluoridation in Hamilton (Item 4.8)

Mr. Pastoric gave a presentation in opposition to water fluoridation. A copy of his presentation was retained for the record.

(x) Heather Dawn Gingerich representing the International Medical Geology Association (Canada) respecting the presentation of recent peer-reviewed research concerning municipal water fluoridation and maternal child health outcomes (Item 4.9)

Ms. H.D. Gingerich gave a presentation in opposition to water fluoridation. A copy of her presentation was retained for the record.

(xi) Terry Wilson respecting the social and economic problems associated with water fluoridation (Added as Item 4.10)

Mr. Wilson gave a presentation in opposition to water fluoridation. Mr. Wilson indicated his concern with fluoridation and submitted a petition to the Board requesting that Hamilton water not be treated with hydrofluorosilicic acid.

A copy of a petition was presented, and has retained by the Clerk.

(xii) Peter Ormond representing the Green Party of Canada, Hamilton Centre Riding, respecting fluoridation in other jurisdictions and requesting that Hamilton remove fluoride from Hamilton's water (Added as Item 4.11)

Mr. Ormond gave a presentation in opposition to water fluoridation. A copy of his presentation was retained for the record.

(xiii) Sheldon Thomas representing the Clean Water Legacy respecting the chemical fluorosilicic acid in the practice of water fluoridation, with specific attention to the health effects of certain contaminants that are known to accompany the fluorosilicic acid product (Added as Item 4.12)

Mr. Thomas gave a presentation in opposition to water fluoridation. A copy of his presentation was retained for the record.

(xiv) Bob Green Innes respecting concurs of potential health and environmental hazards associated with water fluoridation (Added as Item 4.13)

Mr. Innes gave a presentation in opposition to water fluoridation. His concerns surrounded fluoridated drinking water and osteoporosis.

(xv) Tim Burton respecting how water fluoridation discriminates against those living in poverty (Added as Item 4.14)

Mr. Burton gave a presentation in opposition to water fluoridation. His concerns surrounded those living in poverty and the effects of fluoridation.

(xvi) Victoria Wondergem respecting health concerns with respect to fluoride in the City of Hamilton's water supply (Added as Item 4.15)

Ms. Wondergem gave a presentation in opposition to water fluoridation. Her concerns surrounded fluoridated drinking water and osteoporosis.

(xvii) Gerald Cooper representing People for Safe Drinking Water respecting the safety and legality of fluoridating Hamilton's drinking water (Added as Item 4.16)

Mr. Cooper gave a presentation in opposition to water fluoridation. A copy of his presentation was retained for the record.

(xviii) Simon J Kiss representing Wilfrid Laurier University respecting research into the politics and public options towards fluoridation in the City of Waterloo (Added as item 4.17)

Mr. Kiss gave a presentation in support of water fluoridation and displayed his research findings with respect to Waterloo's decision to take fluoride out of their water supply. A copy of his presentation was retained for the record.

Copies of the presentations can be found as Appendix "A" to Board of Health Report 12-003.

The delegates respecting BOH08024(c), respecting Water Fluoridation: New Data and Recent Developments, were received.

(i)(b) Correspondence respecting water fluoridation 7.1(b):

(i) Correspondence from Sheldon Thomas representing the Clean Water Legacy's opposition to water fluoridation in Hamilton

(ii) Correspondence from Gideon Forman representing the Canadian Association of Physicians for the Environment (CAPE) requesting the City of Hamilton to cease the practice of water fluoridation

(iii) Correspondence from Robert Fleming representing the Canadians Opposed to Fluoridation (COF) respecting the harms of water fluoridation

(iiii) Correspondence from The Council of Canadians respecting their opposition to the use of fluoride in drinking water

(v) Correspondence from James Beck respecting Canadian Water Fluoridation Deputation

(vi) Correspondence from Diane Sprules respecting her Critique of Health Canada's 2010 Technical Guideline on Fluoride

(vii) Correspondence from Peter Ormond respecting concerns with respect to the continued use of inorganic fluorides as a public health policy

(viii) Correspondence from Mary Pearson respecting concerns with water fluoridation (Added Item)

The correspondence respecting BOH08024(c) respecting Water Fluoridation: New Data and Recent Developments, was received.

(g) NOTICES OF MOTION (Item 10)

Councillor Whitehead introduced the following notice of motion:

(i) Water Fluoridation: New Data and Recent Developments BOH08024(c) (City Wide)

(a) That Health Canada be requested to regulate the fluorosilicate hexafluorosilicic acid (H2SiF6) and sodium Silicofluoride (Na2SiF6), used as a treatment for dental cavities in drinking water, as drugs under the *Food and Drug Act;*

(b) That all chemicals, especially fluorosilicates, added to drinking water for the purpose of treating dental decay undergo new drug applications and be assigned drug numbers by Health Canada;

(c) That classification of fluorosilicates as a drugs shall be based on at least one long term toxicology study to determine health effects in humans;

(d) That at least one properly conducted, double blinded, randomized placebo controlled clinical trial be used to provide effectiveness as the basis for a new drug classification;

(e) That staff contact Dr. Satish Deshpande, Team Leader, Water Standards Section, Ontario Ministry of the Environment, to request a copy of the NSF Standard 60 required toxicology studies of the product used for fluoridation in Hamilton, to ensure its safety at the maximum use level, including effects from any potential contaminants in the product;

(f) That the City of Hamilton make the above recommendations to Health Canada, to reassure the citizens of Hamilton that the use of

fluorosilicates added to drinking water for the purpose of treating dental decay is safe and what the health effects are;

(g) That a copy of this resolution be sent to the Federal and Provincial Minister of Health, and Hamilton area MPs and MPPs;

(h) That Hamilton area MPs and MPPs be requested to follow up on this issue with the Minister of Health and report back to the Hamilton Board of Health with a response.

Councillor Jackson introduced the following notice of motion:

(ii) Oral Health Reports to the Board of Health

That the Medical Officer of Health and Public Health Services be directed to provide writen “Oral Health” reports, beginning in 2013 and thereafter once per term of City Council or as required or requested by the Board of Health.

(h) GENERAL INFORMATION (Item 11)

CORRESPONDENCE (Item 11.1)

(i) Ministry of Health and Long-Term Care Public Health Accountability Agreement with the City of Hamilton dated January 1, 2011 (Added Item 11.1(a))

Dr. Richardson stated that the Ministry of Health has responded and accepted the amendments made to the targets outlined in the Public Health Accountability Agreement.

The correspondence from the Ministry of Health and Long-Term Care respecting the Public Health Accountability Agreement with the City of Hamilton, was received.

(g) ADJOURNMENT (Item 13)

The Board of Health adjourned at 6:15 p.m.

Respectfully submitted,

Mayor R. Bratina
Board of Health

Christopher Newman
Legislative Coordinator
April 16, 2012

BOH 08024(c)

Hamilton

Public Health Services
Water Fluoridation Review

Brief History in Hamilton

- 1950s and 60's
  - Four plebiscites on water fluoridation
- 1964
  - Water fluoridation initiated
- 2007
  - Facilities required upgrading
- 2008
  - City Council reaffirmed support

Hamilton

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Findings of the 2012 PHS Review

New data on safety or effectiveness?

- Australian study: 28.7% more caries in baby teeth and 31.6% more in adult teeth in unfluoridated cities
- Australian study: If Brisbane and South East Queensland fluoridated their water, they would prevent 10,437 years of disability and $666 million in state and private expenses
- American study: 0.26 more teeth at age 20, larger impact for individuals of lower socio-economic status, i.e. 1 in four people would lose a tooth by age 20 without fluoridation

Hamilton

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Findings of the 2012 PHS Review
(continued)

- University of Calgary review
  - Ample evidence of effectiveness
  - Important to monitor fluoride concentrations, particularly in rural areas to help prevent fluorosis
  - Practical way to address oral health inequities
  - Majority of various Canadian populations are supportive of or not opposed to fluoridation

Hamilton

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Decisions by Political Bodies

Continue or Initiate

- Halton Region: continue fluoridation (January 2012)
- Peel Region: continue fluoridation (April 2011)
- Toronto: continue fluoridation (April 2011)
- Maquoketa, Iowa City: initiate fluoridation (January 2012)
- Pinellas Park, Florida: initiate fluoridation (January 2012)
- State of Arkansas: initiate fluoridation on systems serving over 5000 (February 2011)
- Port Macquarie-Hastings, Australia: initiate fluoridation (February 2012)

Discontinue

- Amherstburg, Ontario: discontinue fluoridation (January, 2012)
- Lakeshore (which neighbours Amherstburg): discontinue fluoridation (November 2011)
- Williams Lake, BC and Lake Cowichan, BC: discontinue fluoridation (November 2011)

Hamilton

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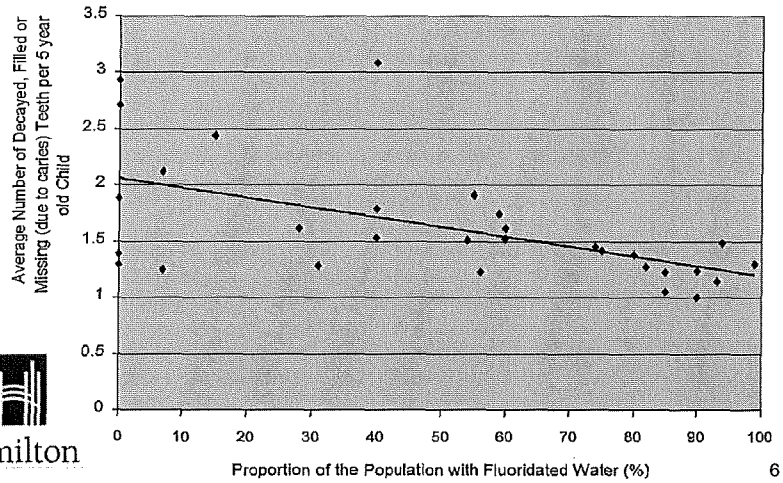
Ontario by Health Unit

Relationship Between Oral Health of 5 year olds and Proportion of the Population with Fluoridated Water in 30/36 of Ontario Health Units, 2005-07



Hamilton

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Community Drinking Water Fluoridation

Dr. Arlene King, Chief Medical Officer of Health
Presentation to Hamilton Board of Health
April 16, 2012

Ontario

Community Water Fluoridation

- Community water fluoridation is, **"one of the greatest public health achievements of the 20th century."**
- Community water fluoridation is **supported by more than 90 national and international organizations** as the most cost effective and equitable strategy for the prevention of dental decay.
- Fluoridating drinking water is:
  - Safe
  - Effective – it works
  - Economical – it's cost effective
  - Equitable – it reaches everyone

Community Water Fluoridation is Safe

- In Ontario, fluoride additives must meet standards of quality and purity before they can be used.
- In Ontario, fluoride additives are regulated by the Ministry of the Environment.
- Systems that fluoridate must also ensure that a water sample is taken at the end of the fluoridation process at least once every day and tested.

Community Water Fluoridation is Safe - II

- Hydrofluorosilicic acid is the most commonly used compound for water fluoridation.
- When added to water it dissolves completely to release fluoride ions and break down into harmless compounds – it ceases to exist as hydrofluorosilicic acid. [1], [2]
- People do not ingest hydrofluorosilicic acid when they drink fluoridated water. [2]
- Fluoride is not a fertilizer. Fluoride is a naturally occurring mineral found in soil, air, plants, animals and water supplies in the environment.

[1] Health Canada, March 18, 2008, Joint Government of Canada Response
[2] John Braam, P.Eng. Director Of Water And City Engineer, London. Report to Chair And Members Civic Works Committee. Jan 2012

Community Water Fluoridation is Safe - III

- Drinking water systems that fluoridate are required to maintain a range of 0.5 to 0.8 mg/L fluoride.
- In concentrations used for water fluoridation, fluoride is not toxic or harmful. [1] [2]
- Difference in the effect of a massive dose of fluoride and the effect of taking small amounts of fluoride daily to reduce tooth decay.
  - Like many essential substances needed for good health (i.e. salt, iron, vitamins and oxygen) fluoride can be toxic in excessive quantities [1]
- The possibility of adverse health effects from continuous low level consumption of fluoride over long periods has been studied extensively - scientific evidence indicates that fluoridation of community water supplies is both safe and effective.
- The optimal range of fluoride used for water fluoridation already has a built in margin of safety that takes into consideration the use of fluorides from other sources. [3]

[1] American Dental Association. Fluoridation facts. Chicago, IL: ADA; 2005. http://www.ada.org/sections/news/AnEvents/pdfs/fluoridation_facts.pdf

[2] Health Canada. *Guidelines for Canadian Drinking Water Quality: Fluoride Guideline Technical Document.* Environmental and Workplace Health, Prepared by the Federal-Provincial-Territorial Committee on Health and the Environment. December 2010.

[3] Ontario Dental Association. Myths and Facts. March 2011

Community Water Fluoridation is Safe - IV

- After more than 60 years of research, scientific evidence indicates that the fluoridation of community water supplies is safe with little to no evidence that fluoridation is associated with cancer, bone disease, kidney disease, birth defects, or other adverse health effects. [1] [2]
- Since 1997 alone, there have been 18 major reviews examining fluoridation, including an expert panel convened by Health Canada in 2007 which concluded that the weight of evidence from all currently available studies shows no harmful health risk at current fluoride levels.

[1] Rabb-Waytowich D. Water fluoridation in Canada: past and present. J Can Dent Assoc. 2009 Jul;75(6):451-4.

[2] McDonagh MS, Whiting PF, Wilson PM, Sutton AJ, Chestnutt I, Cooper J, Misso K, Bradley M, Treasure E, Kleijnen J. Systematic review of water fluoridation. BMJ. 2000 Oct 7;321(7265):855-9.

Community Water Fluoridation is Safe - V

- Most common side effect of excess fluoride consumption is dental fluorosis.
- Questionable, very mild, mild and moderate dental fluorosis have no effect on tooth function. [1]
- Prevalence of moderate and severe fluorosis in Canada is extremely low.
- The *Canadian Health Measures Survey: Oral Health Statistics 2007-2009* concluded that:

  "[so] few Canadian children have moderate or severe fluorosis that, even combined, the prevalence is too low to permit reporting. This finding provides validation that dental fluorosis remains an issue of low concern in this country." [2]

[1] Denbesten P, Li W. Chronic fluoride toxicity: dental fluorosis. Monogr Oral Sci. 2011;22:81-96.

[2] Health Canada. Report on the findings of the oral health component of the Canadian Health Measures Survey 2007-2009. http://www.fptdwg.ca/assets/PDF/CHMS CHMS-E-tech.pdf

Community Water Fluoridation is Effective

- Water fluoridation can reduce tooth decay in children's primary teeth by up to 60 %, and in their permanent teeth by up to 35 %. [1]
- Adults experience a 20 to 40 % reduction in tooth decay from lifelong exposure to water fluoridation. [1]
- Water fluoridation can reduce root surface decay up to 35 percent in individuals aged 60 years and older with a history of long-term residence in optimally fluoridated areas.[2]
- Dryden, Ontario - after fluoridation was discontinued in 2001, children within the community's schools showed an increase in decay rates of approximately 26 percent.[3]

[1] American Dental Association. Fluoridation facts. Chicago, IL: ADA; 2005. http://www.ada.org/sections/newsAndEvents/pdfs/fluoridation_facts.pdf

[2] Hunt, R, Eldredge, J and Beck, J. *Effect of residence in a fluoridated community on the incidence of coronal and root caries in an older adult population.* J Public Health Dent 1989, 49(3): 138-141.

[3]Health Canada. Chief Dental Officer.

Community Water Fluoridation is Highly Cost-Effective

- Adding fluoride to water is the best way to provide fluoride protection to a large number of people at a low cost.
- The average lifetime cost per person to fluoridate a community can be less than the cost of one dental filling. [1], [2]
- For most cities, every $1 invested in water fluoridation saves $38 in dental treatment costs. [3]

[1] Griffin SO, Jones K, Tomar SL. An economic evaluation of community water fluoridation. J Public Health Dent. 2001;61:78–86.

[2] Campain AC, Mariño RJ, Wright FA, Harrison D, Bailey DL, Morgan MV. The impact of changing dental needs on cost savings from fluoridation. Aust Dent J. 2010 Mar;55(1):37-44.

[3] Centers for Disease Control and Prevention Cost Savings of Community Water Fluoridation http://www.cdc.gov/fluoridation/fact_sheets/cost.htm

Community Water Fluoridation is Equitable

- Water fluoridation benefits all residents, regardless of age, socioeconomic status, education, employment, or dental insurance status.
- It promotes equality among all segments of the population, particularly the underprivileged and the hardest to reach, where other preventive measures may be inaccessible or not affordable.
- It also has been shown to provide the greatest benefits to those that need it the most, meaning those most at risk for disease. [1]

[1] McDonagh M, Whiting P, Bradley M, Cooper J, Sutton A, Chestnutt I, Misso K, Wilson P, Treasure E, Kleijnen J. A systematic review of public water fluoridation. http://www.york.ac.uk/inst/crd/CRD_Reports/crdreport18.pdf

Parting thoughts...

- Tooth decay is the single most common chronic disease among Canadians of all ages
- The dangers associated with poor oral health extend well beyond cavities – poor oral health has been linked to poor nutritional status, low birth weight, childhood obesity, diabetes, cardiovascular disease and respiratory infections
- Even with other sources of fluoride available today, fluoridated water supplies still have an impact on reducing the rates of tooth decay not only in children, but adults and seniors as well
- Discontinuation of drinking water fluoridation risks reducing the impact of low income dental programs, such as Children in Need of Treatment and Healthy Smiles Ontario
- Drinking water fluoridation is safe, effective, highly cost-effective and reaches the entire population

Parting thoughts...

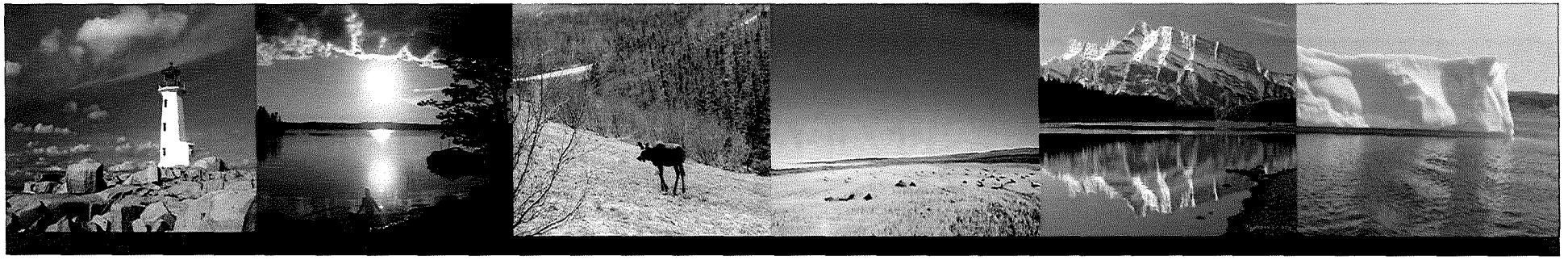
THANK YOU

Office of the Chief Dental Officer

Health Canada's Position on Fluoride

ocdo-bdc@HC-SC.GC.CA

Health Canada Santé Canada



Health Canada's Involvement to date.

- By Invitation;
- Present Science (from Health Canada's expert review panel);
- Present International Information;
- Respect Provincial / Territorial / Municipal Parameters.

Oral Health and Overall General Health

Dental disease is:

- the #1 chronic disease in children & adolescents;
(U.S. Surgeon General's Report, May 2000)
http://www.surgeongeneral.gov/library/oralhealth/

- five (5) times more common than asthma;

- one of the main reasons preschool children receive a general anaesthetic;

- the second most expensive disease category in Canada;
http://www.fptdwg.ca/English/e-documents.html

- 47% of Canadians have had dental disease by 6 years of age, 96% have had it in their lifetime.
http://www.fptdwg.ca/English/e-documents.html

- Oral health is linked to a number of systemic diseases.

In 2006, Health Canada initiated a review of fluoride. This process included:

-3 external experts drafted technical reports on toxicology/intake of fluoride/risks & benefits
-External peer-review of technical reports by 3 experts (2006)

-Expert Panel Meeting with 6 experts & stakeholders (2007)

-Findings & Recommendations of Expert Panel Meeting (2008)
http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/2008-fluoride-fluorure/index-eng.php

-Guideline Technical consultation document prepared
-2 month national public consultation undertaken (2009)
http://www.hc-sc.gc.ca/ewh-semt/consult/_2009/fluoride-fluorure/index-eng.php

-Approval on the updated technical report received from 2 Federal-Provincial-Territorial Committees
-Release of Guideline Technical Document (2010)
http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/2011-fluoride-fluorure/index-eng.php

Findings & Recommendations from Review

Total Daily Intake:

General decrease in recent years (Use of supplements has decreased and concentrations of fluoride in infant formulas have decreased)

Dental Fluorosis:

First 3 years of age is period of most significant concern;

Point of concern should be moderate dental fluorosis (Dean's Index);

Other Health Effects:

No conclusive evidence related to bone fracture, cancers, intelligence quotient, skeletal fluorosis, immunotoxicity, reproductive and developmental toxicity, genotoxicity and neurotoxicity based on a MAC of 1.5 mg/L.

The **MAC** of 1.5 mg/L for fluoride in drinking water should be reaffirmed.

To adopt a level of 0.7 mg/L as the **optimal** target concentration

On Health Canada's process:

"Health Canada has established a comprehensive process for developing new guidelines and reviewing existing ones that require an update. The process is consultative, transparent, and based on risk and science."

Commissioner on Environment and Sustainable Development in his report tabled in September 2005

http://www.oag-bvg.gc.ca/internet/English/parl_cesd_200509_04_e_14951.html#ch4hd4a

Fluorosis → 6 - 12 year olds

Normal teeth	Questionable[1]	Very Mild	Mild	Moderate /severe[2]
60%	24%	12%	4%	<0.3%

[1] ill defined and could be due to antibiotic usage, infection, severe fever, trauma etc.
http://www.fptdwg.ca/English/e-documents.html

Note:

- Initial WHO central calibration
- Recalibration on first day of each new site
- Recalibration at mid point of each site
- Recalibration before end

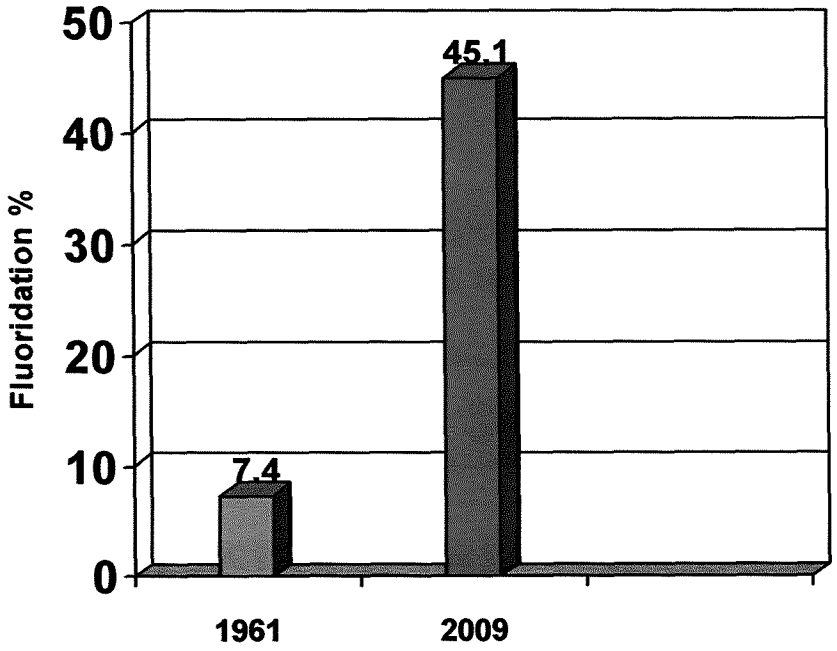
[2] Statistics Canada criteria for withholding reporting value:

- Highly unstable numbers (<10)
- Coefficient of variation > 33.3%

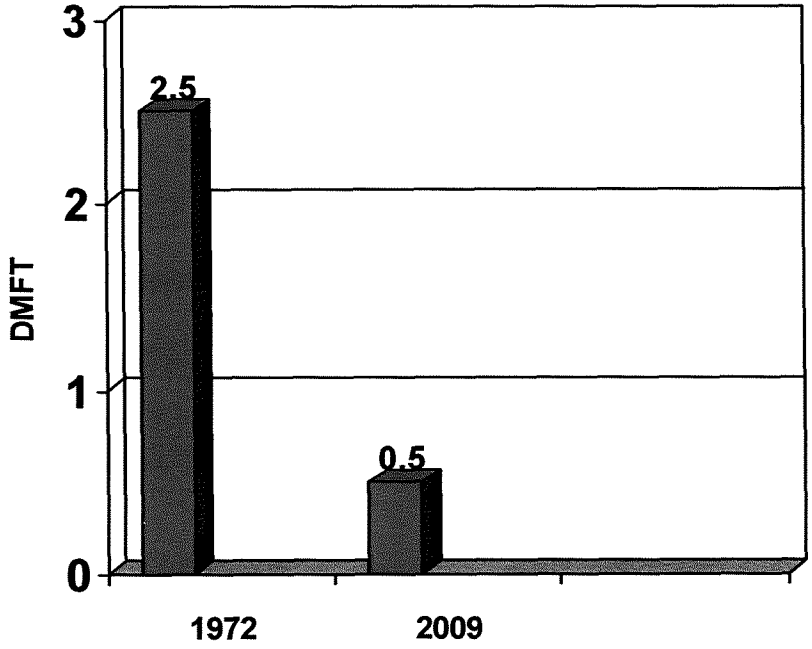
For information regarding measures spread in data see the Statistics Canada web site:
http://www.statcan.gc.ca/edu/power-pouvoir/ch12/5214876-eng.htm

1961-2009 Trends in Water Fluoridation and Dental Decay in Canada.

Fluoridation %



Children's Decay (DMFT) Rates



Dr. Carlos Quinonez, Faculty of Dentistry, University of Toronto

http://www.hc-sc.gc.ca/ahc-asc/branch-dirgen/fnihb-dgspni/ocdo-bdc/project-eng.php

http://www.fptdwg.ca/English/e-documents.html

Conclusions

Health Canada continues to recognize the benefits of community water fluoridation, and supports it as a safe and an effective method to prevent tooth decay.

A Message from the Chief Public Health Officer

Water Fluoridation

Dental disease is the number one chronic disease in North America. It affects a staggering 96% of Canadian adults, is on the rise among young Canadian children in some areas, and poor dental health increases the risk of other diseases.

The Public Health Agency of Canada supports water fluoridation for our oral health. Simply put, it is a safe and cost effective public health measure which has the potential to benefit everyone, regardless of age, socioeconomic status, education, or employment.

David Butler Jones
Chief Public Health Officer of Canada

September 2011
http://www.phac-aspc.gc.ca/cpho-acsp/statements/20110913-eng.php

Royal College of
Dental Surgeons of Ontario

Ensuring Continued Trust

6 Crescent Road
Toronto, ON Canada M4W 1T1
T: 416.961.6555 F: 416.961.5814
Toll Free: 800.565.4591 www.rcdso.org

DELEGATION IN SUPPORT OF FLUORIDATION
CITY OF HAMILTON BOARD OF HEALTH

DR. RON YARASCAVITCH
COUNCIL MEMBER
ROYAL COLLEGE OF DENTAL SURGEONS OF ONTARIO

Monday, April 16, 2012
Council Chambers, Hamilton City Hall
Hamilton, Ontario

Good afternoon. I want to thank the Board of Health for the opportunity to speak on this very important issue.

My name is Dr. Ron Yarascavitch and I am a member of the governing council of the Royal College of Dental Surgeons of Ontario.

RCDSO is a provincial health-care regulatory body. We are mandated by provincial law to protect the public's right to quality oral health care in Ontario.

We do not represent dentists but license and regulate the dental profession in Ontario.

I want to emphasize that point: RCDSO does not speak on behalf of the dental profession. We are the body mandated by provincial law to work in the interests of public protection and safety.

We take this mission very seriously. That is why in 2003 our governing Council passed a policy in support of water fluoridation.

The College's Council, composed both of dentists and public members appointed by government, is convinced that fluoridation of community water systems, at the appropriate levels, is a safe and effective public health measure.

Tooth decay is really a health care issue. The current disparities in oral health are sometimes referred to as a "silent epidemic."

This burden of disease restricts activities in school, work and home, and often significantly diminishes the quality of life.

Tooth decay is an infectious disease. It is the #1 chronic disease in children and adolescents in Canada. It is five times more common that asthma.

Untreated tooth decay can lead to infection, pain and abscesses. It can affect school performance, even a child's sense of self-worth.

One of water fluoridation's biggest advantages is that it benefits all residents of a community – at home, work, school or play – throughout their lifetime.

This is of key importance for families when income level or ability to receive routine dental care is a barrier to good oral health.

Most people know about the benefits that water fluoridation brings to children -- less tooth decay, less pain, fewer fillings and fewer emergency visits to the dentist.

However, not many people realise that those same benefits also apply to adults, including older people. In fact, anyone who still has any of their own teeth will benefit from drinking fluoridated water.

Research tells us that oral health and general health are strongly linked. Fluoridation improves a population's dental health, and as a consequence, its general health.

Studies and independent reviews of the relevant medical and scientific literature over many years consistently affirm the beneficial effects of fluoridation.

This view-point is reinforced in the impressive information report compiled by your public health services department. Medical literature continues to confirm, yet again, that fluoridation is safe and effective.

Fluoridation has now been used throughout the world for at least 60 years.

Around 400 million people in at least 53 countries drink fluoridated water -- including over two-thirds of the population of the United States.

About 70% of the population in Ontario has access to fluoridated water.

This means there is a wealth of experience and evidence about its positive health effects.

Fluoridation is supported at the highest international levels of health policy-making.

The World Health Organisation continues to support water fluoridation. Health Canada supports the use of fluoridation, as does the Chief Medical Officer of Health in Ontario.

The Ontario Medical Association also supports the addition of fluoride to drinking water.

RCDSO is pleased to bring the endorsements of fluoridation from the dean of the dental faculty at the University of Toronto and from the director of the dental department at the Schulich School of Medicine and Dentistry at the University of Western Ontario.

These two dental schools are the premiere leaders in dental education and research in this country.

In closing, on behalf of the Royal College of Dental Surgeons of Ontario (RCDSO), I want to thank you for your serious consideration of this issue.

We sincerely hope, with your usual thoughtfulness and vision, you will ensure that all Hamilton residents will continue to have the benefit of this safe, effective and economical way to help prevent tooth decay in infants, children, adults and seniors.

Thank you for your attention.

Western

Schulich
MEDICINE & DENTISTRY

July 3, 2009

President
Royal College of Dental Surgeons

Dear Sir or Madame,

I am writing in strong support of the RCDSO's position and to provide further a strong endorsement to the fluoridation in municipal drinking water.

Water fluoridation is known to be one of the greatest public health and disease-preventive measures world-wide. Evidence gathered by the Center for Disease Control, National Institute of Dental Research and Health Canada demonstrates that fluoride treated water continues to provide dental health benefits to all ages.

Epidemiological studies have concluded that a daily and frequent small amount of fluoride appears to dramatically reduce the incidence of dental caries in all populations. It has proven to be a safe and effective method of reducing dental decay and retaining tooth structure. More importantly, it suggests that the greatest population who benefits from water fluoridation is children from economically depressed communities.

Opposition of water fluoridation has existed ever since it was introduced in Michigan in the 1940s. Many opposed individuals view fluoridation as limiting their freedom of choice. The latter opposition who believe it is a health concern stems from misinterpretations of the scientific studies of fluoride.

It could conceivably be unethical to not add fluoride in the municipality water supply, because of its sustained record of significantly improving the oral health of local people of all ages, and helping to lower high levels of dental disease for our most vulnerable populations – low or no income families.

Sincerely,

Harinder S. Sandhu, DDS, PhD, Diploma in Perio
Director, Schulich Dentistry

Schulich School of Medicine & Dentistry • The University of Western Ontario
Dentistry • Room 1003, Dental Sciences Building
London, Ontario • N6A 5C1 • Canada
Telephone: (519) 661-3330 • Fax: (519) 661-3875 • www.schulich.uwo.ca/dentistry

Faculty of Dentistry
University of Toronto

OFFICE OF THE DEAN

David Mock, DDS, PhD, FRCD(C)
Professor & Dean
Arthur Zwingenberger Decanal Chair

July 2, 2009

President,
Royal College of Dental Surgeons of Ontario

Dear Sir/Madam:

I am writing in support of the RCDSO's position on water fluoridation. Our position has been clearly stated in a submission prepared in conjunction with the Ontario Agency for Health Protection and Promotion, the Ontario Dental Association and the RCDSO some time ago.

Dental caries is the most prevalent infectious disease and the commonest cause of tooth loss in humans. Besides the obvious pain and suffering it causes, poor oral health and resultant infections have more recently been associated with many other diseases and therefore poor general health. The adverse economic, sociological and psychological effects of dental disease are not inconsequential. Fortunately, a relatively simple, effective and inexpensive means to reduce the occurrence of this condition is available: fluoridation. While fluoride can be delivered in a variety of ways - through toothpaste or direct application by dental professionals - the most efficient means of achieving impact is through fluoridation of public water supplies. In 1999 the United States Centers for Disease Control and Prevention identified fluoridation of water as one of the ten greatest achievements of public health in the previous century. Unfortunately, in Ontario, we are witnessing a concerted effort to reverse fluoridation of public water. The opponents of fluoridation have selectively presented research to make their case but the fact is there are few health interventions for which the benefits and risk are so clear.

Claims that therapeutic concentrations cause diseases such as cancer do not stand up to scientific scrutiny. Thorough reviews have been undertaken by reputable and trustworthy scientific and health related organizations including Health Canada, the CDC, the Office of the Surgeon General of the United States, and the World Health Organization. The result has been unanimous support for the safety and efficacy of water fluoridation in the control of dental caries. Furthermore, major dental and medical associations and public health agencies, both nationally and internationally support its use. The most significant beneficiaries are the most vulnerable, children from lower income families, who can least afford to obtain either preventive dental services, or the even most expensive treatments if caries are not prevented.

It is illogical to deprive our population, particularly our children, of the benefit of water fluoridation based on unsupported speculation while disregarding sound scientific evidence and the advice of the leading national and international health authorities. Like all therapeutic treatments, research should and will continue in order to maximize the safety and efficacy of fluorides so that future generations will reap even more benefit. Millions of children, now adults, have benefitted to date and, if reason prevails, millions more will.

Yours sincerely,

David Mock

David Mock

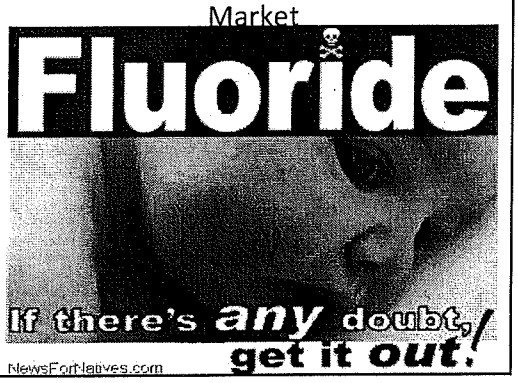
124 Edward Street Toronto Ontario M5G 1G6
Phone (416) 979-4910 Ext. 4382
Facsimile (416) 979-4937
E-mail david.mock@dentistry.utoronto.ca

End the practice of Artificial Fluoridation of water

By Shane Coleman

University of Waterloo graduate Biology/Chemistry

President of the Hamilton Farmers Market



Sometimes we need to rethink science practices

- Remember thalidomide
  Woman took morning sickness pills that was reported "to be Safe"

DEET insecticide

Lead in paint and gas

BiPhenol A in plastics causes hormone disruptions.
(Canada was first country to declare BPA a toxic substance)

The Globe and Mail

Flouridation may not do much for cavities

MARTIN MITTELSTAEDT
From Friday's Globe and Mail
Published Thursday, Apr. 15, 2010 4:12PM EDT
Last updated Friday, Apr. 16, 2010 7:49AM EDT

When it comes to fluoridating drinking water, Ontario and Quebec couldn't be further apart. Ontario has the country's highest rate of adding the tooth-enamel-strengthening chemical into municipal supplies, while Quebec has one of the lowest, with practically no one drinking fluoridated water.

But surprisingly, the two provinces have very little difference in tooth-decay rates, a finding that is likely to intensify the ongoing controversy over the practice of adding fluoride to water as a public health measure.

Fluoridation is one major and obvious difference between the provinces. More than three-quarters of Ontario residents live in areas where municipal water supplies contain the chemical. In Quebec, 94 per cent have water free of the additive, according to figures published by Health Canada in 2007.

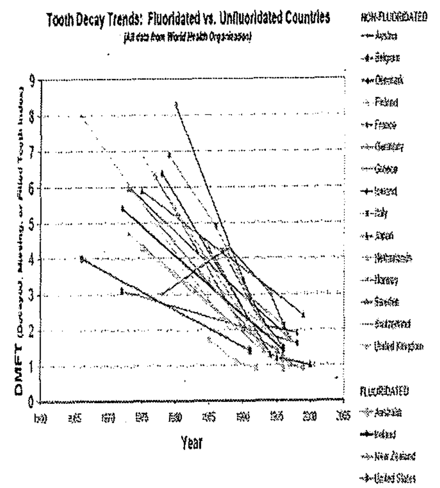
Since then, Quebec City has voted to stop fluoridating, indicating that the difference between the two provinces is currently even more pronounced.

Some critics of fluoridation say the survey does raise questions about the practice.

"Fluoridation is no longer effective," contends Hardy Limeback, head of the preventive dentistry program at the University of Toronto, who says adding the chemical to water is "more harmful than beneficial."

- **Nov. 15, 2011 letter by Dr. Hardy Limeback, professor and head of preventive dentistry at the University of Toronto.**
- **Limeback has "personally conducted years of funded research at the University of Toronto on the topic of fluorosis (fluoride poisoning) and bone effects of fluoride intake. A bone study, for which we received national funding, comparing hip bones of people who live in Toronto (fluoridated since 1963) to the bones of people from Montreal (Montreal has never been fluoridated) suggests disturbing negative changes in the bone quality of Torontonians. This is not good."**
  Limeback's letter also stated that fluoride has not been shown to be safe and effective and that the pendulum is shifting to where fluoride is being considered "not safe, and no longer effective."

Figure 1.



Conclusion: Tooth decay rates have decreased in both Fluoridated and non fluoridated countries

Cities which have stopped fluoridation since 1990

				[illegible] Borough Council (PA)	November 11, 2008
[illegible], Ontario, Canada	February 7, 2012	[illegible]	[illegible]	[illegible], Maine	November 4, 2008
[illegible]	February 7, 2012	[illegible], Tennessee	[illegible]	[illegible], Maine	November 4, 2008
[illegible], PA	January 11, 2012	[illegible], Quebec, Canada	October [illegible]	Corning, New York	November 4, 2008
[illegible], PA	December 20, 2011	[illegible]	September [illegible]	Ainsworth, Nebraska	November 4, 2008
[illegible], New Brunswick, Canada	December 19, 2011	[illegible]	August [illegible]	Aurora, Nebraska	November 4, 2008
[illegible], New Brunswick, Canada	December 12, 2011	[illegible]	July [illegible]	Battle Creek, Nebraska	November 4, 2008
Lake Cowichan, British Columbia, Canada	November 19, 2011	[illegible]	May [illegible]	[illegible], Nebraska	November 4, 2008
Williams Lake, British Columbia, Canada	November 19, 2011	[illegible]	May [illegible]	[illegible], Nebraska	November 4, 2008
		[illegible]	May 11, [illegible]	Bridgeport, Nebraska	November 4, 2008
Amesbury, MA	November 8, 2011	[illegible]	May 11, [illegible]	Broken Bow, Nebraska	November 4, 2008
Lawrenceburg, TN	October 18, 2011	[illegible]	May 11, [illegible]	Cambridge, Nebraska	November 4, 2008
Churchill, Manitoba, Canada	October 18, 2011	[illegible]	May 11, [illegible]	Central City, Nebraska	November 4, 2008
New Plymouth, New Zealand	October 13, 2011	[illegible]	May 11, [illegible]	Chadron, Nebraska	November 4, 2008
Spencer, [illegible]	October 13, 2011	[illegible]	May 11, [illegible]	Cozad, Nebraska	November 4, 2008
Palmer, AK	October 11, 2011	[illegible]	May 5, [illegible]	Crawford, Nebraska	November 4, 2008
[illegible] County, Florida	October 4, 2011	[illegible], Pennsylvania	February [illegible]	David City, Nebraska	November 4, 2008
College Station, TX	September 22, 2011	[illegible]	December [illegible]	[illegible], Nebraska	November 4, 2008
Slave Lake, Alberta, Canada	September 12, 2011	[illegible]	December [illegible]	Friend, Nebraska	November 4, 2008
Hohenwald, TN	September 6, 2011	[illegible]	November [illegible]	Geneva, Nebraska	November 4, 2008
[illegible], PA	August 16, 2011	[illegible], Nebraska	November [illegible]	Gothenburg, Nebraska	November 4, 2008
Spring Hill, TN	August 15, 2011	[illegible], Nebraska	November [illegible]	Grand Island, Nebraska	November 4, 2008
[illegible], OR	August 8, 2011	[illegible]	September [illegible]	Grant, Nebraska	November 4, 2008
Taber, Alberta, Canada	July 20, 2011	[illegible]	September [illegible]	Hastings, Nebraska	November 4, 2008
Meadow Lake, Saskatchewan, Canada	July 4, 2011	[illegible]	July [illegible]	Hebron, Nebraska	November 4, 2008
[illegible], New Zealand	June 30, 2011	[illegible]	April [illegible]	Imperial, Nebraska	November 4, 2008
Fairbanks, Alaska	June 6, 2011	[illegible]	March [illegible]	Kimball, Nebraska	November 4, 2008
Mount Clemens, Michigan	May 16, 2011	[illegible]	February [illegible]	Lexington, Nebraska	November 4, 2008
Lago Vista, Texas	April 21, 2011	[illegible]	February [illegible]	Madison, Nebraska	November 4, 2008
[illegible]	March 17, 2011	[illegible]	January [illegible]	Milford, Nebraska	November 4, 2008
Independence, Virginia	February 16, 2011	[illegible]	January [illegible]	Mitchell, Nebraska	November 4, 2008
Calgary, Alberta, Canada	February 8, 2011	[illegible]	December [illegible]	North Platte, Nebraska	November 4, 2008
Yellow Springs, Ohio	February 7, 2011			Ord, Nebraska	November 4, 2008
[illegible], Quebec, Canada	February 7, 2011			Pawnee City, Nebraska	November 4, 2008

Cities which have stopped fluoridation since 1990

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Cities which have stopped fluoridation since 1990

		[illegible]	November 7, 2000	[illegible]	April 7, [illegible]
Kalispell, Montana	November 5, 2002	[illegible]	November 7, 2000	[illegible], British Columbia, Canada	[illegible]
Washoe County, Nevada	November 5, 2002	[illegible] City, Utah	November 7, 2000		
Methuen, Massachusetts	November 5, 2002	Hyrum City, Utah	November 7, 2000	[illegible]	February [illegible]
Redding, California	November 5, 2002	Providence City, Utah	November 7, 2000	[illegible], Oregon	December 22, 1997
Watsonville, California	November 5, 2002	Smithfield City, Utah	November 7, 2000	Largo, Florida	July 15, 1997
Texarkana, Arkansas	November 5, 2002	Logan City, Utah	November 7, 2000	[illegible], Florida	July 15, 1997
Ashdown, Arkansas	November 5, 2002	River Heights, Utah	November 7, 2000	[illegible] Beach, Florida	July 15, 1997
Oneida, New York	August 6, 2002	Pequannock, New Jersey	November 7, 2000	[illegible], New York	May 21, 1997
Franklin, North Carolina	May 2002	[illegible], Illinois	November 7, 2000	[illegible] City, California	May 1, 1997
[illegible], Massachusetts	April 1, 2002	Wooster, Ohio	November 7, 2000	[illegible], Pennsylvania	April 15, [illegible]
Monroe, Louisiana	February 26, 2002	Squamish, British Columbia, Canada	October 18, 2000	Village of [illegible], Wisconsin	December [illegible]
Colorado Springs, Colorado	January 15, 2002	Woodside, California	September 2000	[illegible] County, New York	November [illegible], quit after [illegible] years
Kennewick, Washington	January 15, 2002	Ste. Genevieve, Missouri	August 8, 2000		
[illegible], Vermont	January 8, 2002	Winfield, Kansas	March 6, 2000	[illegible], British Columbia, Canada	November [illegible], quit after [illegible] years
Lanai, Hawaii	January 2002	Wilmington, Massachusetts	February 15, 2000		
Cobalt, Ontario, Canada	December 11, 2001	Santa Barbara, California	November 23, 1999	[illegible], Nebraska	December [illegible]
[illegible], Colorado	November 2001	Johnstown, New York	November 19, 1999	[illegible], Wisconsin	November [illegible]
Modesto, California	November 7, 2001	Wichita, Kansas	October 26, 1999	[illegible], Alaska	July 11, [illegible]
Worcester, Massachusetts	November 7, 2001	Boca Raton, Florida	October 25, 1999	[illegible], New York	February 1, [illegible]
Flagstaff, Arizona	November 7, 2001	El Cajon, California	April 27, 1999	[illegible] Springs, Florida	January [illegible]
[illegible], Oregon	November 7, 2001	[illegible] Water District, California	April 7, 1999	[illegible]	December [illegible]
Kamloops, British Columbia, Canada	October 13, 2001	Lakeside Water District, California	April 6, 1999	[illegible], Pennsylvania	[illegible]
White Salmon, Washington	September 2001	Hutchinson, Kansas	March 30, 1999	[illegible], Maryland	February [illegible]
[illegible], Washington	September 2001	[illegible] Water District, California	March 24, 1999	[illegible], New York	December [illegible]
[illegible], South Carolina	June 2001	La Mesa, California	March 9, 1999	[illegible], Maryland	November [illegible] quit
Harper, Kansas	May 31, 2001	Santa Cruz, California	March 4, 1999 banned	[illegible], Massachusetts	November 4, [illegible]
[illegible], Massachusetts	May 15, 2001	Bremerton, Washington	February 2, 1999		
McPherson, Kansas	April 3, 2001	Olympia, Washington	December 15, 1998	[illegible], Oklahoma	June 17, [illegible]
[illegible], Maine	May 5, 2001	Seward, Nebraska	November 3, 1998	[illegible], California	February [illegible]
Blue River, Wisconsin	February 2001	Whitehorse, Yukon Territory, Canada	July 21, 1998 quit after [illegible]	Los Altos Hills [illegible], California	[illegible]
Willamina, Oregon	January 2001	Grand Island, Nebraska	May 13, 1998 quit	Campbell River, British Columbia, Canada	April [illegible] quit after [illegible] years
Ithaca, New York	November 7, 2000	Norfolk, Nebraska	May 13, 1998		
Spokane, Washington	November 7, 2000	North Platte, Nebraska	May 13, 1998	Port Hardy, British Columbia, Canada	November [illegible] quit after [illegible] years
[illegible], Vermont	November 7, 2000			Squamish, British Columbia, Canada	November [illegible] quit after [illegible] years

With a forward thinking Council

- Hamilton Ends Water Fluoridation

- 2012

Fluoride **is Dangerous** to infants

How can parents and caregivers follow the recommendations?

- Breast milk is the most complete form of infant nutrition. The American Academy of Pediatrics recommends that babies be breastfed for the first full year of life.
- When liquid concentrate or powdered infant formula is used, it should be mixed with water that is fluoride-free, or contains very low levels of fluoride.*
- *The Department of Health checked several brands of locally available bottled waters for fluoride content and found all brands contained very low or zero amounts.
- Ready-to-feed formula may also be used.
- Only reverse osmosis filtering systems can remove fluoride from tap water. Filters such as Brita cannot remove fluoride from fluoridated water.

Resources

Vermont Department of Health
Office of Oral Health
108 Cherry Street
Burlington, VT 05401
802-863-7341, or 1-800-464-4343
http://healthvermont.gov/family/dental/fluoride/formula.aspx

Burlington Board of Health
645 Pine Street, PO Box 849
Burlington, VT 05402
802-863-0442
http://www.ci.burlington.vt.us/health

Burlington Community Health Center
617 Riverside Ave.
Burlington, VT 05401
802-864-0309
http://www.communityhealthcenterburlington.org/about_us.htm

La Leche League International
802-985-4228, or 802-863-7981
http://www.lalecheleague.org

American Dental Association
http://www.ada.org/public/topics/fluoride/index.asp

Centers for Disease Control and Prevention
Division of Oral Health
http://www.cdc.gov/fluoridation/safety/infant_formula.htm

The Facts about Fluoridated Water and Infant Formula

City of Burlington Board of Health

VERMONT DEPARTMENT OF HEALTH

Fluoride Dangerous to infants

- **What is the concern about infant formula and fluoridated water?**
- Research has raised the possibility that infants under 12 months of age may be getting too much fluoride, if they drink formula mixed with fluoridated water.
- While more research is being done, the American Dental Association and the Vermont Department of Health recommend mixing powdered or concentrated baby formula **with water that is fluoride-free or contains very low levels of fluoride**, for feeding infants under 12 months of age.
- **Why has the recommendation changed?**
- A child's teeth (baby teeth and permanent teeth) may develop **very mild to mild fluorosis** from drinking fluoridated water as an infant.
- The Vermont Department of Health and the Burlington Board of Health want parents and childcare providers to know how to avoid the possible risk of fluorosis. **What is fluorosis?**
- Fluorosis is not a disease. Fluorosis affects the way teeth look:
- In very mild fluorosis, teeth may have faint white lines or streaks not readily visible.
- In the **mild form**, teeth begin to show more visible white spots.
- In **moderate** to **severe** fluorosis, the appearance and form of teeth are seriously affected.
- (Photos of fluorosis can be found on the Vermont Department of Health website: http://healthvermont.gov/family/dental/ fluoride/formula.aspx)
- **Why is fluoride added to water?**
- Fluoride is added to water to reduce tooth decay in children and adults.
- Communities add fluoride to water systems by adjusting the amount of natural fluoride found in the water, to a level that is best for the dental health of its residents. **How would you know if your town water is fluoridated?**
- Burlington's community water supply is fluoridated. If you live in another town, contact your family dentist, doctor or the Vermont Department of Health to find out if the water you drink is fluoridated.
- Call the Department of Health at:
- 802-863-7341, or
- toll-free at 1-800-464-4343
-

1. The Journal of the American Dental Association
January 2011 vol. 142 no. 1 79-87
Evidence-Based Clinical Recommendations Regarding Fluoride Intake From Reconstituted Infant Formula and Enamel Fluorosis

- SCOPE AND PURPOSE OF THE RECOMMENDATIONS

- A multidisciplinary panel, comprising experts on fluoride, epidemiologists, methodologists and practitioners, reviewed the available literature to determine the risk of developing enamel fluorosis as a result of ingesting fluoride from reconstituted infant formula. The American Dental Association (ADA) Council on Scientific Affairs (CSA) convened a panel to evaluate the available scientific evidence on the topic of fluoride intake from infant formula and any association with fluorosis. Although some evidence suggests that fluoride's caries-preventive benefit may be best achieved when a person receives both topical and pre-eruptively administered systemic fluoride,36–39 **the preventive benefit derived from systemic fluoride intake specifically in the first six months of life has not been established.**

Fluorosis Rates

- **A Review by Foulkes RG, "Investigation of inorganic fluoride and its effect on the occurrence of dental caries and dental fluorosis in Canada - final report", *Fluoride*, 1995 Aug, 28:3, 146-148**
- a mean score of 40.5%
- Dental Fluorosis is an epidemic!
- Your teeth are a window to your bones and what is occurring in your body

Dentists have never been trained to know the effect of fluoride on the body

- **Fluoride may damage the brain.** According to the National Research Council (2006), "it is apparent that fluorides have the ability to interfere with the functions of the brain."
- **Fluoride may lower IQ.** There have now been 24 studies from China, Iran, India and Mexico that have reported an association between fluoride exposure and reduced IQ
- **Fluoride affects the pineal gland.** Studies by Jennifer Luke (2001)
- **Fluoride affects thyroid function.** According to the U.S. National Research Council (2006)
- **Fluoride causes arthritic symptoms.** Some of the early symptoms of skeletal fluorosis (a fluoride-induced bone and joint disease that impacts millions of people in India, China, and Africa), mimic the symptoms of arthritis (Singh 1963; Franke 1975; Teotia 1976; Carnow 1981; Czerwinski 1988; DHHS 1991)
- **Fluoride damages bone.** An early fluoridation trial (Newburgh-Kingston 1945-55
- **Fluoride may cause reproductive problems.** Fluoride administered to animals at high doses wreaks havoc on the male reproductive system - it damages sperm and increases the rate of infertility in a number of different species (Kour 1980; Chinoy 1989; Chinoy 1991; Susheela 1991; Chinoy 1994; Kumar 1994; Narayana 1994a,b; Zhao 1995

Fluoride added to our water is not pharmaceutical NaFl- Sodium Fluoride it is industrial waste from fertilizer and aluminum production –NaSiF6 Sodium Fluorosilicate

Sodium Fluorosilicate

Sodium Fluorosilicate
Material Safety Data Sheet

Chemical: Sodium Fluorosilicate

MSDS Number: NaSiF6-1103
Effective Date: 11 October 2003
Issued by: Solvay Chemicals, Inc. Regulatory Affairs Department

1. Company and Product Identification

1.1 Product Name: Sodium Fluorosilicate
Chemical Name: Sodium Silicofluoride
Synonyms: Sodium Fluosilicate, Sodium Fluorosilicate, Sodium Silica Fluoride
Chemical Formula: Na_2SiF_6
Molecular Weight: 188.1
Grade/Trade Names: N/A

1.2 Recommended Uses: Fluoride source for water

1.3 Supplier: Solvay Fluorides, LLC
PO BOX 27328 Houston, TX 77227-7328
3333 Richmond Ave. Houston, Texas 77098

1.4 Emergency Telephone Numbers

Solvay Fluorides
A Subsidiary of Solvay Chemicals, Inc.

Why do the Safty Data Sheets comment :no Data available?

Sodium Fluorosilicate

Sodium Fluorosilicate
Material Safety Data Sheet

10. Stability and Reactivity

Stability: Stable under certain conditions (see below).

10.1 Conditions to avoid: Temperatures above decomposition temperature see section 9.

10.2 Materials and substances to avoid:
- Strong acids-reacts
- Strong alkalis-reacts
- Oxidizing agents-reacts
- Metals-reacts

10.3 Hazardous decomposition products:
- Hydrofluoric Acid
- Fluorine

10.4 Hazardous Polymerization: Not applicable

10.5 Other information: None

11. Toxicological Information

11.1 Acute toxicity:
Inhalation: No data available.
Oral LD50, rat, 125mg/kg (Sodium hexafluorosilicate)
Dermal: No data available.
Irritation: No data available.
Sensitization: No data available.
Comments: No data available.

11.2 Chronic toxicity: No data available.

11.3 Carcinogenic Designation: None

12. Ecological Information

12.1 Acute ecotoxicity: No data available.

12.2 Chronic ecotoxicity: No data available.

12.3 Mobility: No data available.

12.4 Degradation
Abiotic: No data available.
Biotic: No data available.

12.5 Potential for bioaccumulation: No data available.

Note Canada DSL Registration (toxic) WHMIS CLASSIFICATION:D2B Material causing other toxic effect

Sodium Fluorosilicate

Sodium Fluorosilicate
Material Safety Data Sheet

13. Disposal Considerations

13.1 Waste treatment: Consult current federal, state and local regulations regarding the proper disposal of this material.

13.2 Packaging treatment: Consult current federal, state and local regulations regarding the proper disposal of emptied containers.

13.3 RCRA Hazardous Waste: Not listed.

14. Transport Information

Mode	DOT	IMDG	IATA
UN Number	UN 2674	UN 2674	UN 2674
Class	6.1	6.1	6.1
Proper Shipping Name	Sodium Fluorosilicate	Sodium Fluorosilicate	Sodium Fluorosilicate
Hazard label	Toxic	Toxic	Toxic
Subsidiary	Not a marine pollutant	Not a marine pollutant	Not a marine pollutant
Placard	Toxic	Toxic	Toxic
Packing Group	III	III	III
MFAG			
Emergency Info	ERG: 154	EmS: 6.1-04	ERG Code 6L

15. Regulatory Information

National Regulations (US)

TSCA Inventory 8(b): Yes

SARA Title III Sec. 302/303 Extremely Hazardous Substances (40 CFR355): No

SARA Title III Sec. 311/312 (40 CFR 370):
Hazard Category: None

SARA Title III Sec. 313 Toxic Chemical Emissions Reporting (40 CFR 372): No

CERCLA Hazardous Substance (40CFR Part 302):
Listed: No
Unlisted Substance: No

State Component Listing: No Data.

National Regulations (Canada) Canadian DSL Registration: DSL

WHMIS Classification: D2B – Material causing other toxic effect

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Canada

Canadian Centre for Occupational Health and Safety

www.ccohs.ca

Fluorosilicate Acid

National Regulations (Canada) Canadian DSL Registration: DSL

WHMIS Classification: D2B - Material causing other toxic effect

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the

MSDS contains all the information required by the Controlled Products Regulations.

WHIMIS Classifications

What are WHMIS classes or classifications?

WHMIS (Workplace Hazardous Materials Information System) uses classifications to group chemicals with similar properties or hazards. The Controlled Products Regulations specifies the criteria used to place materials within each classification. There are six (6) classes although several classes have divisions or subdivisions. Each class has a specific symbol to help people identify the hazard quickly

Division 2: Materials Causing Other Toxic Effects

These materials are poisonous as well. Their effects are not always quick, or if the effects are immediate but they are only temporary. The materials that do not have immediate effects, however, may still have very serious consequences such as cancer, allergies, reproductive problems or harm to the baby, changes to your genes, or irritation / sensitization which have resulted from small exposures over a long period of time (chronic effects).

Subdivision D2B (toxic) covers mutagenic (to non-reproductive cells), sensitization of the skin, skin or eye irritation, as well as chronic toxic effects.

Examples include: asbestos fibres, mercury, acetone, benzene, quartz silica (crystalline), lead and cadmium. The symbol for materials causing other toxic effects looks like a "T" with an exclamation point "!" at the bottom inside a circle.

Great Lakes United
Union Saint-Laurent Grands Lacs

An international coalition to protect and restore the Great Lakes and St. Lawrence River

Resolution regarding artificial water fluoridation

Whereas the Basel Convention, Environment Canada and United States Environmental Protection Agency (US EPA) all state that the chemicals used in artificial water fluoridation are hazardous waste which may not be put directly into lakes, rivers and oceans; and,

Whereas artificial water fluoridation chemicals contain between 20 to 30% hydrofluorosilicic acid (inorganic fluoride), trace amounts of arsenic, lead, mercury, radionuclides and other heavy metals, all considered to be toxic substances under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Priority List of Hazardous Substances in USA, 1989 First Priority Substances lists in Canada and proposed for "virtual elimination" under the Canadian Environmental Protection Act, the 1997 Binational Toxic Strategy and the 1978 Great Lakes Water Quality Agreement; and,

Whereas fluoride is not removed in sewage treatment and remains a toxic constituent of the effluent discharged by treatment plants to rivers and lakes; and,

Whereas background levels of fluoride in the Great Lakes exceed the Canadian Water Quality Guideline (CWQG) and fluoride concentrations in sewage effluent are 3-10 times in excess of the CWQG. At these concentrations fluoride is known to be toxic to a variety of water species such as salmon, caddisfly, daphnia magna & others; and,

Whereas the US EPA labor unions, the Canadian Association of Physicians for the Environment (CAPE), and professionals world-wide state that artificial water fluoridation is not effective in the prevention of cavities and not safe to vulnerable populations, as demonstrated in the recent US National Research Council 2006 Review; and,

Whereas there is a wide range of health vulnerabilities in a population and a wide range of consumption patterns for fluoridated water and beverages and foods made with fluoridated water, which means that an individual's daily dose of fluoride chemicals from drinking water cannot be controlled;

Whereas imposing chemicals used as a medication to a population without a prescription or their informed consent is unacceptable; and,

Whereas less than one percent of treated water is actually ingested by the body and the remaining 99 percent put into the environment; and,

Therefore be it resolved that Great Lakes United supports statements by the United States Environmental Protection Agency labor unions, Canadian Association of Physicians for the Environment (CAPE), and professionals worldwide that the practice of artificial drinking water fluoridation be terminated; and,

Therefore be it further resolved that Great Lakes United works to reverse existing government policies supporting artificial drinking water fluoridation;

Water Fluoridation: Health Canada is Misleading the Public

Paul Connett, PhD
Professor Emeritus of Environmental Chemistry
St. Lawrence University, Canton, NY
Director, Fluoride Action Network
www.FluorideALERT.org
pconnett@gmail.com
Hamilton, April 16, 2012

Outline of presentation

1. Health Canada's failure to organize health studies in fluoridated communities
2. HC's bias
3. HC's superficial review of the literature
4. Fluoride and the brain
5. HC's confusion between concentration and DOSE
6. Margin of Safety
7. Precautionary Principle

1. Health Canada's failure to study the health of fluoridated communities

In Canada there has been NO investigation of a possible relationship between the consumption of fluoridated water and

lowered IQ in children
behavioral changes in children
increased bone fractures in children
arthritic symptoms in adults
hypo-thyroidism
Early onset of puberty
Alzheimer's disease in adults

If you don't look, you don't find.

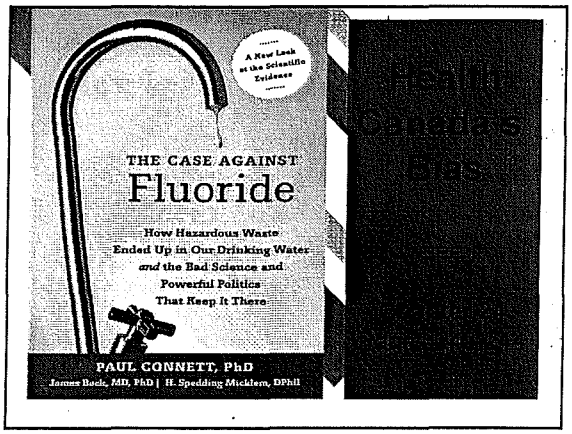
The absence of study is not the same as absence of harm.

Instead of science we are getting politics from Health Canada

Dr. Peter Cooney

- Dr. Peter Cooney, the Chief Dental Officer of Canada, told an audience in Dryden, Ontario (April 1, 2008),
- "I walked down your High Street today, and I didn't see anyone growing horns, and you have been fluoridated for 40 years!"

2. Health Canada's Bias



Health Canada's bias on fluoridation

- In 2006-2008 Health Canada picked a panel of six experts to review the literature on the safety of fluoridation. **4 of these 6 experts were dentists known to be pro-fluoridation.**
- Jay Kumar (from NY), Chris Clark (from BC), Stephen Levy (from Iowa) and Michael Levy (from Quebec)

Dr. Cooney's history of the "Expert Panel"

- 3 external experts drafted technical reports on toxicology/intake of fluoride/risks & benefits (2006)
- External peer-review of technical reports by 3 experts (2006)
- Expert Panel Meeting with 6 experts & stakeholders (2007)
- Findings & Recommendations of Expert Panel Meeting (2008)
- http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/2008-fluoride-fluorure/index-eng.php

(Cooney, slide 4)

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- Findings & Recommendations of Expert Panel Meeting (2008)
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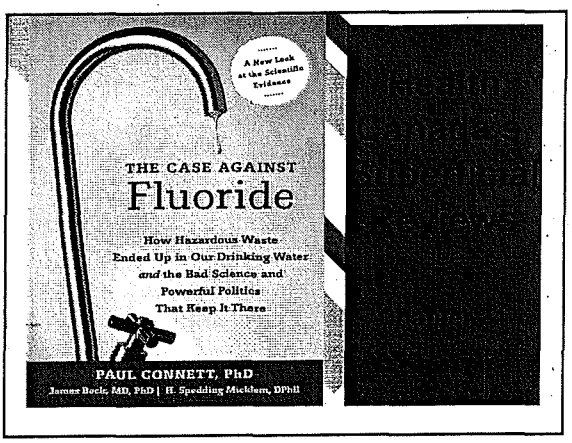
3. Health Canada's superficial reviews of the health literature



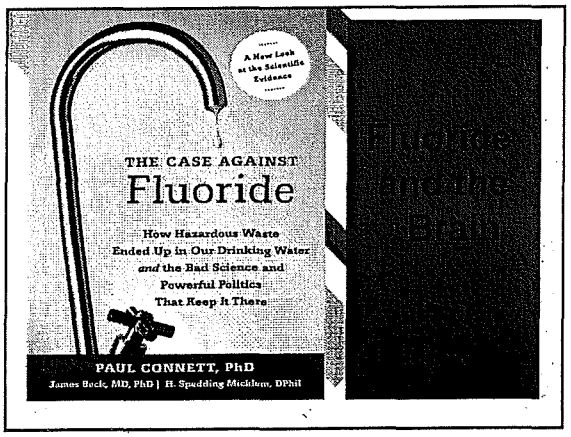
Health Canada superficial

When Health Canada published a draft of their review in 2009 it was **superficial.** For example they only looked at **FIVE** of **23** published studies showing an association between exposure to fluoride and lowered IQ.

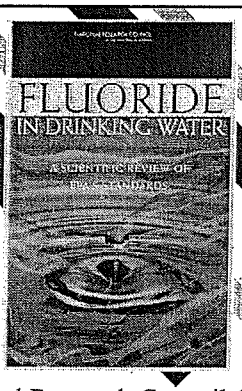
Health Canada *ignores* scientific input

- I sent in citations to the missing 18 IQ studies. But, in its final review in 2011 Health Canada had still only reviewed the 5 **(not 23)** studies on IQ.
- They asked for public input but they ignored scientific input when it was given.
- WHY?

4. Fluoride and the brain



- Over 100 animal studies show fluoride damages animal brain
- Over 10 animal studies show that fluoride changes animal behavior
- Three studies show that fluoride damages fetal brain
- 26 studies show an association between modest exposure to fluoride and lowered IQ



National Research Council (2006)

"it is apparent that fluorides have the ability to interfere with the functions of the brain."

Health Canada Expert Panel

- **Intelligence Quotient:** Weight of evidence does not support a link between fluoride and intelligence quotient deficit. There are significant concerns regarding the available studies, including quality, credibility, and methodological weaknesses such as the lack of control for confounding factors, the small number of subjects, and the dose of exposure . . .

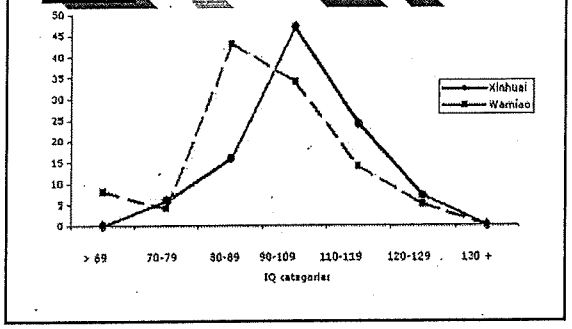
Human studies

- As of 2012, there are now 26 published studies (from China, Iran, India and Mexico) indicating that fluoride exposure is associated with lowered IQ in children (Health Canada only looked at five of these)

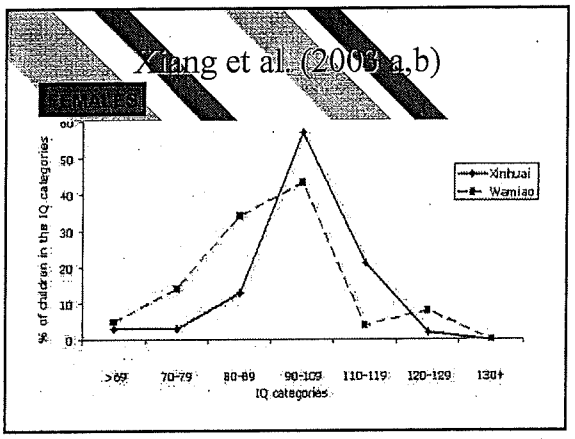
Xiang et al. (2003 a,b)

- Compared children in two villages (<0.7ppm versus 2.5 - 4.5 ppm F in water)
- Controlled for lead exposure and iodine intake, and other key variables (NOTE: both lead exposure and low iodine also lower IQ).
- Found a drop of 5-10 IQ points across the whole age range
- The whole IQ curve shifted for both males and females

Xiang et al. (2003 a,b)



Xiang et al. (2003 a,b)



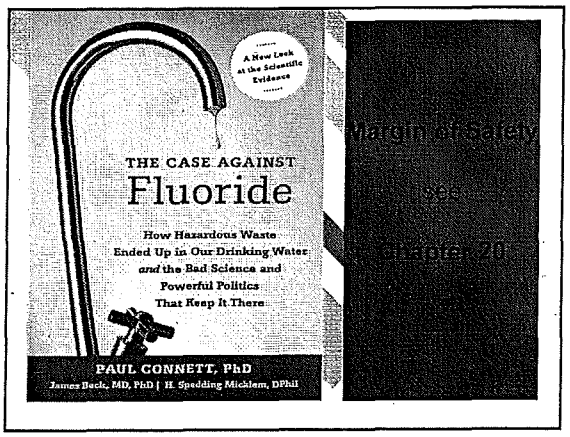
Xiang et al. (2003 a,b)

- Estimated that IQ in children lowered at
- 1.9 ppm fluoride in water (threshold)

5. Health Canada's confusion between Concentration and DOSE

A child drinking 3 liters of water at 0.7 ppm would get a HIGHER DOSE (2.1 mg/day) than a child drinking ONE Liter of water at 1.9 ppm (DOSE = 1.9 mg/day)

6. Margin of Safety



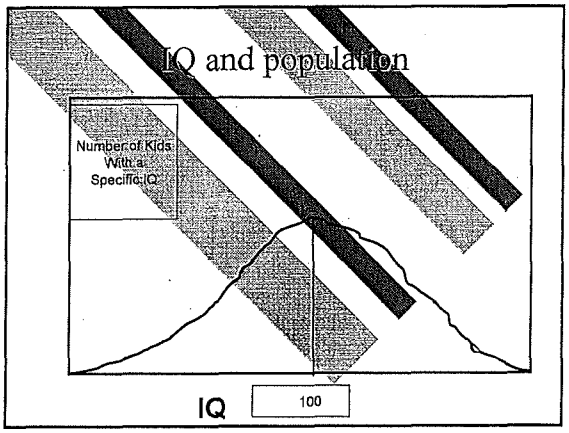
There is no adequate margin of safety

- Normally we apply a safety factor of 10 to the toxic dose found in a small study in order to protect the whole population
- If we assume that the Chinese children were drinking **one** liter of water per day (at 1.9 mg/liter) the dose that lowered IQ was 1.9 mg/day
- That would mean to protect the intelligence of ALL the children in a large population a safe dose would be 0.19 mg/day (1.9 divided by 10)
- **That is about one glass of water at 0.7 ppm!**

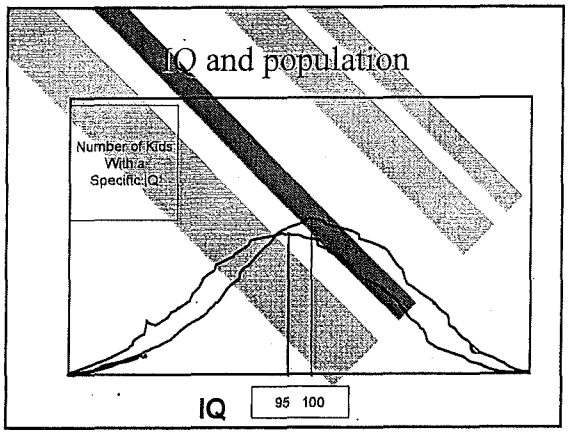
Two preposterous notions

- What parent in their right mind would put their children's teeth above their brains?
- What government would support a program aimed at lowering tooth decay - by at most 0.6 of one tooth surface – if it lowered the IQ of the population by even a small amount?

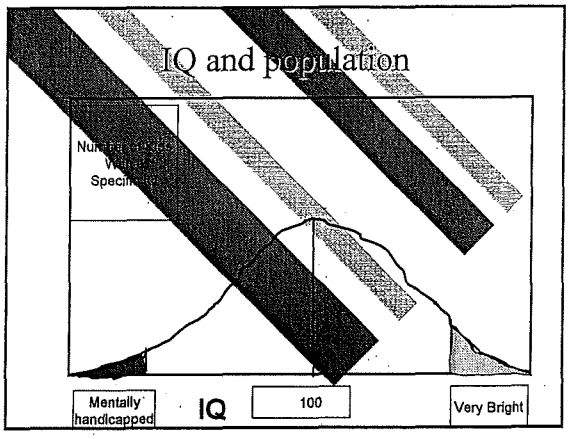
IQ and population



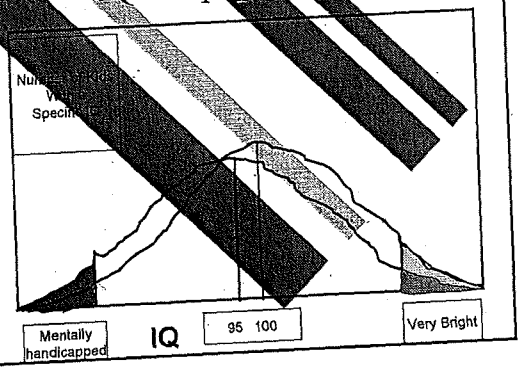
IQ and population



IQ and population



IQ and population

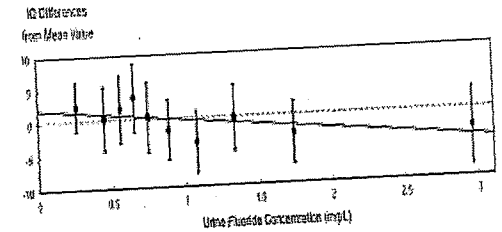


Ding et al. 2011 (J. Hazardous Materials)

- "Mean value of fluoride in drinking water was 1.31 ± 1.05mg/L (range 0.24–2.84)."
- **" Conclusions"**
- Overall, our study suggested that low levels of fluoride exposure in drinking water had negative effects on children's intelligence...

Ding et al, 2011: The higher the level of fluoride in the urine the lower the IQ

Ding et al. 2011



Xiang et al, 2012: The higher the level of fluoride in the plasma the lower the IQ

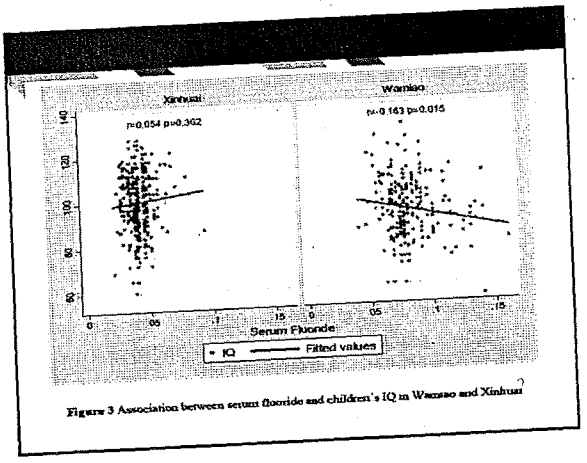
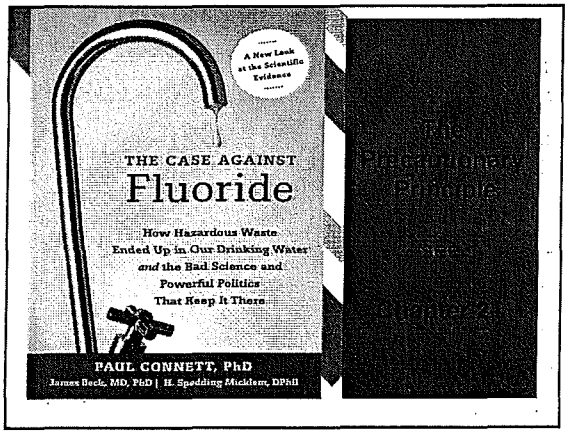


Figure 3 Association between serum fluoride and children's IQ in Wanxiao and Xinhuai

7. The Precautionary Principle



The Precautionary Principle

"If there is uncertainty, yet credible scientific evidence or concern of threats to health, precautionary measures should be taken. In other words, preventive action should be taken on early warnings even though the nature and magnitude of the risk are not fully understood."

Joel Tickner and Melissa Coffin

The Precautionary Principle – Our criteria for application

1. Is the risk of harm plausible?
2. Is the evidence of harm supported by a number of peer-reviewed, published studies?
3. Is the potential harm serious?
4. Are the effects reversible?
5. Is the public being fully informed of the potential health risks?
6. Does the proposed intervention achieve the desired benefit?
7. How significant are the consequences if the practice is halted?
8. Are there alternatives?

The Precautionary Principle – Tickner and Coffin's questions

- Are there other ways of delivering fluoride besides the water ?
- Does Fluoride need to be swallowed to prevent tooth decay?
- Has tooth decay dropped at the same rate in countries with and without water fluoridation?
- Are people now receiving fluoride from many other sources besides the water supply?
- Do studies indicate fluoride's potential to cause a range of adverse systemic health effects?

Tickner and Coffin in March 2006 issue of the Journal of Evidence-Based Dental Practice

What risks should we take to save at most

- 0.6 of one tooth surface?
- (Brunelle and Carlos, 1990)

Fluoride may cause bone cancer (osteosarcoma)

Fluoridation may actually be killing a few young men each year

Osteosarcoma: Science vs Politics

- The science: In 2001, Dr. Elise Bassin (a dentist) successfully defended her doctoral thesis at Harvard.
- She found (in a matched case-control study) that if young boys were exposed to fluoridated water in their 6th/7th or 8th years, they had a 5-7 fold increase in developing osteosarcoma by the age of 20, compared to non-exposed boys.
- Now the politics
- Between 2001 and 2005, Bassin's thesis adviser - Prof. Chester Douglass three times concealed Bassin's findings from his peers, the NRC and his funders.
- Bassin's thesis "discovered" by Michael Connett in Jan 2005.

Osteosarcoma

- Bassin publishes research in the May 2006 issue of the journal ***Cancer Causes and Control***.
- In a **letter** published in the same issue, Douglass promises a study that he claims will discount Bassin's findings.
- Douglass promised his study for the Summer of 2006 – Meanwhile,

Osteosarcoma

- Health authorities in fluoridation practicing countries like Australia, Canada, the UK and the US used Douglass's promise of a study as if it was a fully fledged peer-reviewed and published study

What does 2008 Health Canada expert panel say about Osteosarcoma?

"It is important to avoid any generalization and overinterpretation of the results of the Bassin et al. paper and to await the publication of the full study before drawing conclusions and particularly before influencing any related policy . . ."

What does Health Canada 2011 REVIEW say about Osteosarcoma?

A letter to the editor was published by Douglass (Bassin's thesis director) and Joshipura (2006) to warn readers not to generalize or overinterpret the results of the Bassin et al. (2006) paper. According to the authors, Bassin et al. (2006) presented only the first of two sets of cases with their own control group. Douglass and Joshipura's (2006) research group also found some positive associations between fluoride and osteosarcoma

What does Health Canada 2011 Fluoride REVIEW say about Osteosarcoma?

in the analysis of the first set of cases; however, their preliminary findings from the analysis of the second set of cases (1993-2000) did not appear to replicate the overall findings from the first part of the study. The authors state that their findings do not suggest an overall association between fluoride exposure and osteosarcoma (Douglass and Joshipura, 2006).

Osteosarcoma

- The Douglass study was finally published in August 2011 (Kim et al, 2011). BUT
  - **it did NOT refute Bassin's findings!**

Hamilton Board of Health (April 16, 2012) report

- "Many claims have been made that water fluoridation causes serious health risks, but existing scientific evidence refutes these claims."
- Where is the existing scientific evidence that refutes:
- The 26 IQ studies and other studies on the brain?
- Bassin's study on osteosarcoma?

The confidence of their convictions?

- I would like to recommend that Hamilton Council organize a public debate on this issue so that those experts who have presented their views on this subject – some with considerable confidence – can have their views visibly tested by doing so in the context of those holding a different point of view AND
- So that these same experts can be asked questions directly by the public.
- I am prepared to come to Hamilton virtually any time within the next few months to participate in such a debate

EXTRA SLIDES

Part 1. Fluoridation is a poor medical practice

Fluoridation is a poor medical practice

1. Except for an early experiment with iodine, fluoridation is the only time we have used the public water supply to deliver medicine.

The REASONS for not doing so are fairly obvious:

2. You can't control who gets the medicine.
3. You can't control the DOSE (mg/day) that people drink.

Proponents claim

1. That water fluoridation is not medication.
2. BUT the definition of a medicine is a substance given to people to help prevent or combat a disease.
3. Fluoride is added to water to help combat or prevent tooth decay (a disease).
4. Fluoride is being used as a medicine.
5. Water fluoridation is "mass medication."

Fluoridation is a poor medical practice

4. Fluoride is NOT a nutrient.
5. Not one single biological process needs fluoride (fluoride's benefit is topical not systemic).
6. Many biological processes are harmed by fluoride

Part 2.
Fluoridation violates medical ethics

Fluoridation violates medical ethics

1. The supreme medical ethic as laid down by Hippocrates 2000 years ago is "First Do No Harm"
2. Modern medical ethics requires doctors to allow their patients "informed consent to medicine and medical practices."
3. No government has the right to force medication on its people.
4. A local government (usually with no medical qualifications) is doing to EVERYONE what a doctor can do to NO ONE.

Proponents claim

1. That they are merely adjusting the levels of a naturally occurring mineral.
2. But, just because a substance occurs naturally does not make it safe – arsenic occurs naturally!

Part 3.
Fluoridation violates nature's guidelines for babies!

Nature's guideline for babies

1. The best indicator of what a baby needs for healthy development is the composition of mothers' milk
2. The level of fluoride in mothers' milk is VERY, VERY low – 0.004 ppm (US NRC, 2006, p 40)
3. This suggests that babies do not need much fluoride and that MAYBE fluoride is dangerous for the baby.
4. 0.7 ppm is 175 times the levels in mothers' milk
5. A bottle fed baby in a fluoridated community is getting about 200 times Nature's guideline!

Part 4.
Fluoridation violates common sense

Fluoridation violates common sense

- Even promoters of fluoridation now admit that fluoride works TOPICALLY not SYSTEMICALLY (CDC, 1999)
- In other words fluoride works on the outside surface of the tooth NOT from inside the body.
- Fluoridation should have ended in 1999!

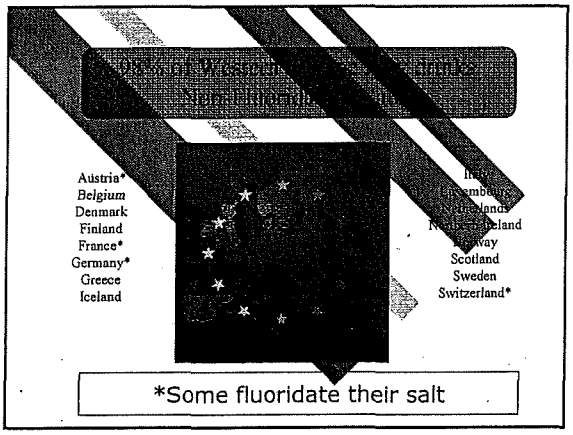
Fluoridation violates common sense

- If fluoride works on the outside of the tooth why swallow it? Why put it in the drinking water?
- If you want fluoride brush your teeth with fluoridated toothpaste and then spit it out.
- This way you avoid exposing tissues that a) don't need it and b) may be harmed by it
- And you also avoid forcing it on people who don't want it!

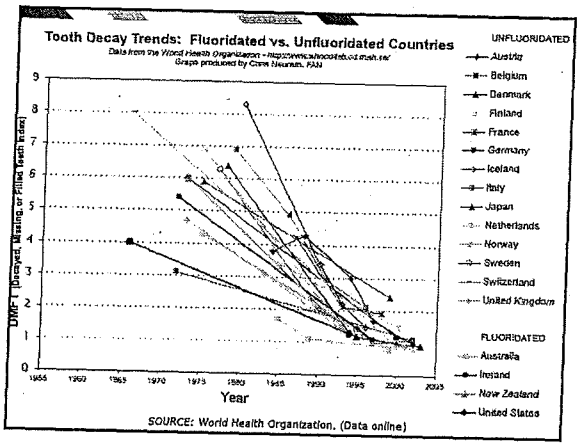
Fluoridation violates common sense

- Very few countries fluoridate their water
- But there is very little difference in tooth decay between fluoridated and non-fluoridated countries

- Only SEVEN Countries have more than 50% of the population drinking fluoridated water (Australia, Ireland, Israel, Malaysia, New Zealand, Singapore and the United States)



According to WHO data tooth decay in 12-year-olds is coming down as fast in F as NF countries



Part 5.
Fluoridation chemicals are not pharmaceutical grade

Fluoridation chemicals are not pharmaceutical grade

- The chemicals used are not pharmaceutical grade as used in dental products
- They come from the wet scrubbers of the phosphate fertilizer industry
- A spray of water captures two very toxic gases (HF and SiF_4) and forms H_2SiF_6 (hexafluoro silicic acid) .
- This hazardous waste cannot be dumped into the sea by international law, BUT in the US if this waste is PURCHASED it becomes a PRODUCT and no longer covered by US hazardous waste regs!

Fluoridation chemicals

The main chemicals used are the silicon fluorides:

H_2SiF_6 (hexafluorosilicic acid) or its sodium salt Na_2SiF_6 (sodium hexafluorosilicate).

Neither of these chemicals, either in their pure form, or the contaminated solutions used, have been put through any rigorous toxicological testing.

Fluoridation chemicals contain cancer-causing substances

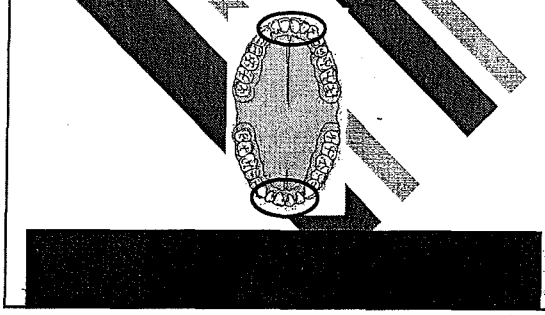
- One of the contaminants of the industrial grade fluoridating agents is ARSENIC
- According to the US EPA there is no safe level for arsenic because it is a known human carcinogen
- The use of these fluoridating chemicals INEVITIBALY will lead to an increase in cancer

Part 6.
The evidence of benefit is very, very weak

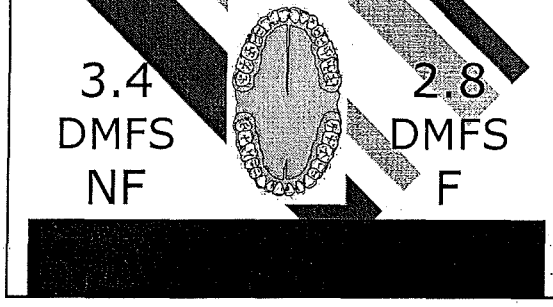
NIDR conducted the largest survey of tooth decay ever conducted in the US (1986-7)

- The teeth of over 39,000 children in 84 communities were examined (Brunelle & Carlos, 1990).
- They measured tooth decay as DECAYED, MISSING and FILLED SURFACES (DMFS)

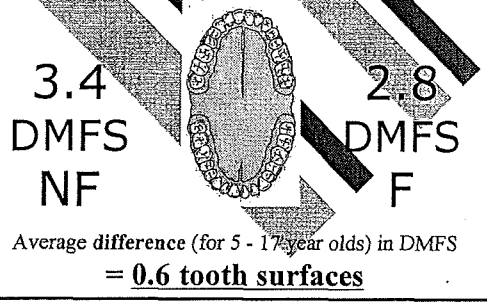
Decayed Missing and Filled surfaces (DMFS)



Decayed Missing and Filled surfaces (DMFS)



The largest US survey of tooth decay
Brunelle & Carlos, 1990



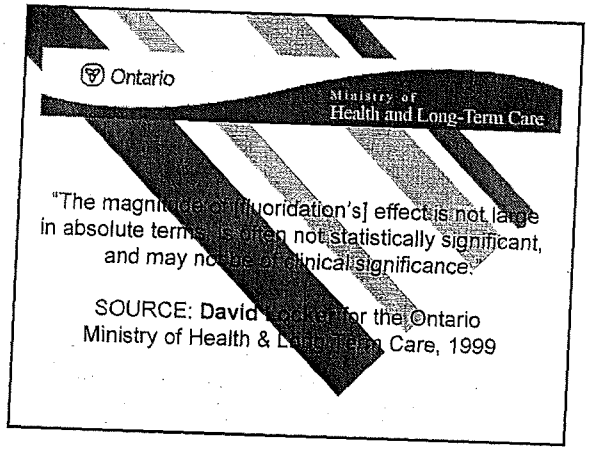
Average **difference** (for 5 - 17 year olds) in DMFS
= **0.6 tooth surfaces**

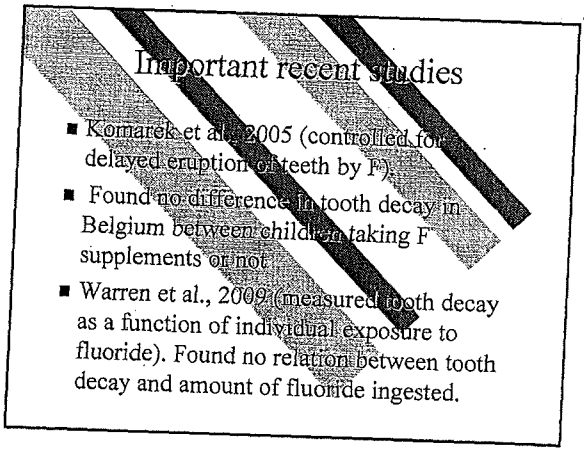
What risks should we take to save at most

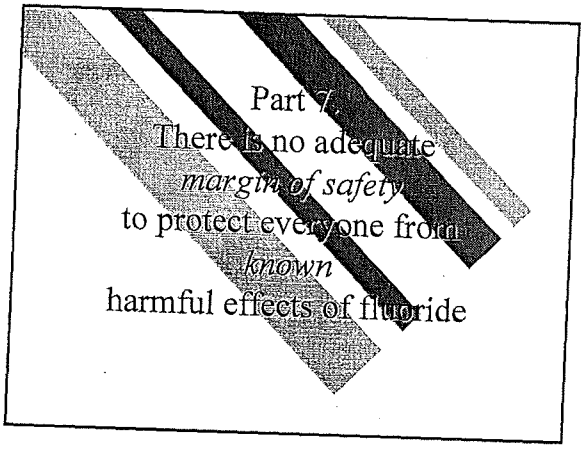
- 0.6 of one tooth surface?
- (Brunelle and Carlos, 1990)

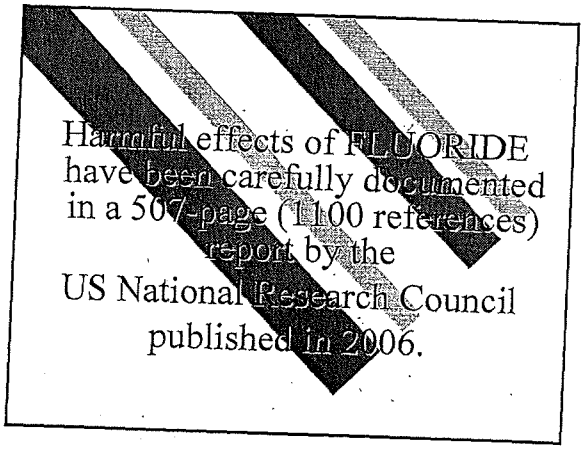
Studies in Australia have found even less saving than O.6 of one tooth surface!

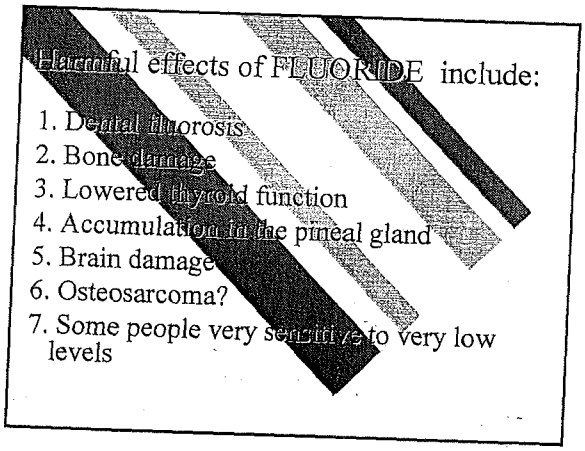
- Spencer et al. (1996) found a saving in two states of ONLY 0.12 – 0.3 permanent tooth surfaces.
- Armfield and Spencer (2004) found no statistically significant difference in tooth decay in the permanent teeth between children in South Australia who had drunk fluoridated water all their lives and those who had drunk bottled or tank water.

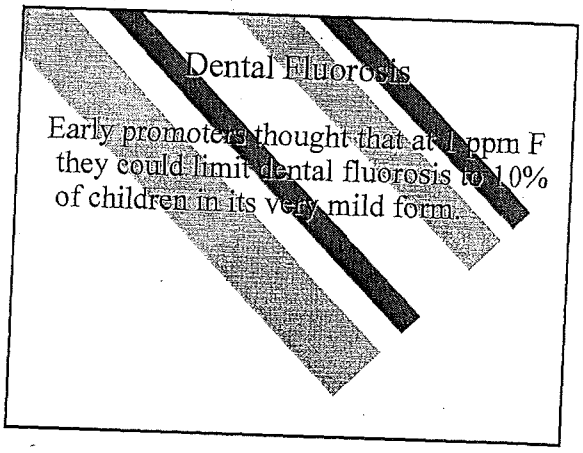

Ontario
Ministry of
Health and Long-Term Care
"The magnitude of [fluoridation's] effect is not large in absolute terms, is often not statistically significant, and may not be of clinical significance."
SOURCE: David Locker for the Ontario Ministry of Health & Long-Term Care, 1999

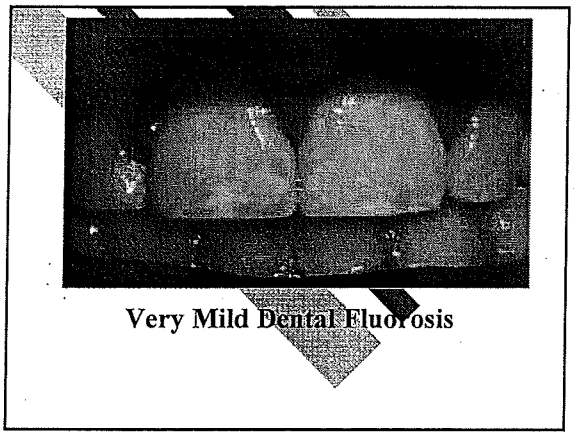

Important recent studies
Komarek et al., 2005 (controlled for delayed eruption of teeth by F).
Found no difference in tooth decay in Belgium between children taking F supplements or not.
Warren et al., 2009 (measured tooth decay as a function of individual exposure to fluoride). Found no relation between tooth decay and amount of fluoride ingested.


Part 7.
There is no adequate
margin of safety
to protect everyone from
known
harmful effects of fluoride


Harmful effects of FLUORIDE
have been carefully documented
in a 507-page (1100 references)
report by the
US National Research Council
published in 2006.


Harmful effects of FLUORIDE include:
1. Dental fluorosis
2. Bone damage
3. Lowered thyroid function
4. Accumulation in the pineal gland
5. Brain damage
6. Osteosarcoma?
7. Some people very sensitive to very low levels

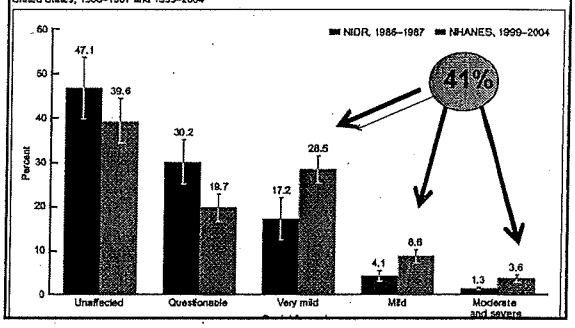

Dental Fluorosis
Early promoters thought that at 1 ppm F they could limit dental fluorosis to 10% of children in its very mild form.

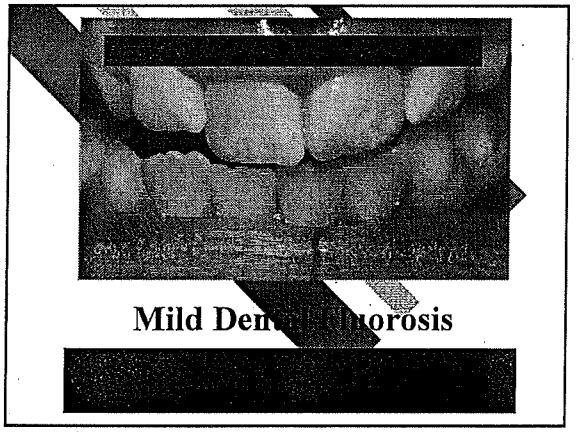


Very Mild Dental Fluorosis

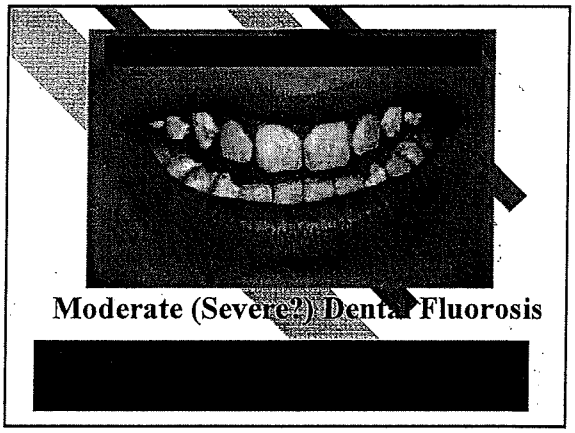
CDC, 2010: 41% of American children aged 12-15 have DF

Figure 3. Change in dental fluorosis prevalence among children aged 12–15 participating in two national surveys: United States, 1986–1987 and 1999–2004





Mild Dental Fluorosis



Moderate (Severe?) Dental Fluorosis

A reckless assumption

It is reckless to assume that when fluoride is causing harm to the growing tooth cells that it is not causing harm to bone cells, brain cells or other developing tissues in a baby's body.

The baby's developing brain

The baby should NOT be exposed to fluoride of up to 200 times the level of fluoride that occurs in mothers milk.

Fluoride and the Thyroid gland

"several lines of information indicate an effect of fluoride exposure on thyroid function."

If fluoride lowers thyroid function

- It could explain:
- 1) delayed eruption of primary teeth
- 2) lowered IQ in children
- 3) Increase in hypothyroidism among US population, plus the accompanying symptoms – obesity, lethargy, tiredness not relieved by sleep etc

Fluoride and the Pineal gland

Fluoride & Pineal Gland

- In 1997 Jennifer Luke confirmed that fluoride accumulates in the human pineal gland. She found an average of 9,000 ppm on the calcium hydroxy apatite crystals (highest 21,000 ppm) (Luke, 2001).
- In animals (Mongolian gerbils) fluoride lowers melatonin production and shortens time to puberty (Luke, Ph.D. thesis, 1997).

Fluoride and bone fractures in children

Fluoride and Children's Bone

The Newburgh-Kingston, NY trial (Schlesinger et al. 1956) also reported about twice the incidence of cortical bone defects in the children in the fluoridated community (13.5%) compared with the non-fluoridated community (7.5%).

Alarcon-Herrera et al. (2001)

- In a Mexican study researchers found that as the severity of dental fluorosis went up so did the incidence of bone fractures in both children and adults

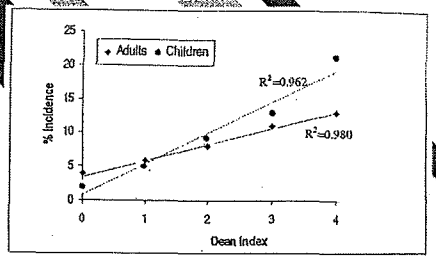


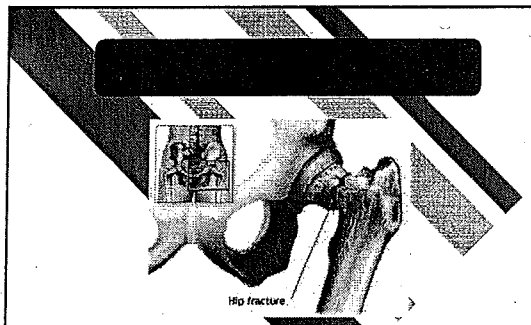
Figure 4. Incidence of bone fractures plotted against the severity of dental fluorosis (Dean's index) for children and adults in the Guadiana Valley in the state of Durango in Mexico (from Alarcon-Herrera et al. 2001).

Fluoride and arthritis

Arthritis

- The first symptoms of fluoride poisoning of bone are identical to arthritis (stiffness, aching joints and pain in the bones)
- According to the CDC, arthritis affects 68 million people in the US – 1 in 3 American adults!
- No fluoridated country is collecting fluoride bone levels in a systematic fashion to check a possible connection with arthritis or other bone problems!

Fluoride and hip fractures in the elderly (studies are mixed)



"All members of the committee agreed that there is scientific evidence that under certain conditions fluoride can weaken bone and increase the risk of fractures."

Li et al. 2001: Most important hip fracture study. Hip fractures doubled at 1.5 ppm (NS), tripled at 4.3 ppm (S)

Li et al (2001)

Table 5: Hip fracture rates in the elderly in six Chinese villages with well water fluoride levels ranging from 0.25 – 7.97 ppm. The hip fracture rates are compared to the village (village 3) at 1.00 ppm. (Li et al, 2001).

Fluoride concentration (ppm) ppm	Odds Ratio ODDS RATIO
Village 1. 0.25 – 0.34	0.99
Village 2. 0.58 – 0.73	1.12
Village 3. 1.00 – 1.06	1.00
Village 4. 1.45 – 2.19	2.13
Village 5. 2.62 – 3.56	1.75
Village 6. 4.32 – 7.97	3.26*
	* result is statistically significant.

Presentation to the Hamilton Board of Health

April 16, 2012.

Tony Matthews

Council of Canadians Hamilton Chapter

Good afternoon, Chairman, councillors, staff, presenters, and, members of the public. I would like to thank the councillors for their foresight in establishing this forum of review a couple of years ago. It illustrates wisdom in allowing a further assessment of information and new information that has arisen since that time.

I am Tony Matthews and today I am representing the local chapter of Council of Canadians on the issue of fluoridation. I would first like to read a letter from Maude Barlow our national spokesperson.

The issue of fluoridating our water supply has not faded away, it has only grown stronger as more studies and public awareness grows about the impact on our health of fluoridating the water supply becomes clearer. Communities are stopping their fluoridation programs or petitioning not to have a program where they don't already have one in place. In Halton last year they also had a session on this topic. They maintained the program by 2 votes. Curiously the well water areas voted in favour of maintaining fluoridation as long as their areas don't get fluoridated, illogical but definitely a case of not in my backyard.

What piqued my interest is that the fluoridation program is based on preventing dental caries and is assessed on this basis alone: as it turns out it is a very narrow assessment of the program.

The basis of promoting fluoridation to prevent dental caries appears flawed. Studies indicate that since fluoridation has been in place dental caries have significantly been reduced in the same manner as it has been reduced in areas that do not fluoridate yet this fact has been ignored by proponents of fluoridation. Public health officials have been told there is no room for personal or professional opinion by them as they are required to tow the provincial line of fluoridation is an effective program. Dental professionals have been brought up on this mantra since their undergraduate days and have expounded the benefits of fluoridation to their clients.

This approach has been impassioned by them and public health staff as an effective means of reducing caries: again not justifiably proven. I have seen public staff extolling the virtues of this program as the best way to save the LICO's dental health also known as poor people. Hamilton Board of Health did a study showing how cost effective it is at 47 to 57 cents a person to fluoridation the whole population not just the disadvantaged LICO group versus other options reviewed costing up to $30 million a year. This suggests a budgetary bias to the cheapest delivery system with the least involvement.

Fluoride has been shown to harden teeth. Harder teeth mean more brittle teeth especially when the tooth requires dental fillings. We don't hear about the costs of maintaining the teeth in later years due to this factor.

The history of fluoridation programs may surprise many of you. It was actually initiated in the USA during the Second World War, a war fought for personal freedoms. The development of the uranium enrichment program was based on using fluoride as was the smelting of aluminum, lead, and, steel. There was a growing issue of workplace and environmental health and safety issues that were going to litigation. This was a threat to the war effort and the expenses of running those businesses supporting this effort. Declassified documents show collusion between government agencies and private businesses to remove this financial risk.

The program was initiated on the basis of reducing the financial exposure to these groups and to continue the war efforts unabated regardless of the health effects it was having on workers and communities. This was another example of the misguided greater good policy. It was then marketed and given to the American Dental Association to maintain.

Let's move away from the dental aspects of the fluoridation programs for it obscures other issues, it is emotional not factual, it uses our children and disadvantaged as pawns to sell the continued use of fluoridation without having to properly assess the facts, studies and public knowledge of the true impact of fluoridation.

What is compelling are other health issues that these studies are indicating that fluoridation is presented as the cause or probable cause of illnesses and diseases to our youth, to our young adults, to our adults and to our seniors. These studies indicate that at the very least further studies should be done as they indicate serious linkages or causations of the following conditions: Alzheimer type memory issues, ADD type symptoms, hypothyroidism, osteoporosis, liver disorders, kidney disorders, and, more.

It begs the question why we continue to ignore these indications! Why does the Public Health Department of Canada not allow immediate investigations into these scientific studies? Why do we as a city fight those who bring it up for further study and action? Is it a fear of increased costs, of professional embarrassment if it proves out it is detrimental to our health on the scale it is being suggested?

The alternate health care costs will overwhelm our society's ability to fund care and public support to those affected in this manner. Look to what is happening to our incidents of these conditions mentioned previously and how we struggle to provide care for citizens. Do you think this merits a total review based on these issues that are not dental caries based?

I ask you all to do what you were elected to do, be our guardians in the public policies we enact or have enacted and make sure they serve our need, make sure they are reviewed to assess the efficacy of our assumptions. Be independent in assessing the data and in who presents the data for it is your decision when made that you hold responsibility for the programs and policies put in force. The public express their input, your staffs' express their input and you must see through the data impartially on behalf of the welfare of your citizenry.

Today's world and all the complexity of it that you must weigh through are overwhelming at times. I ask you to please take time to make an independent appraisal of data presented and how it is presented: progressive or defensive, bias or unbiased, then make an informed choice.

References

1) the fluoride deception, Bryson, Christopher, Seven Stories Press, ISBN 1-58322-700-8, 2004
2) The Case Against Fluoride, Paul Connett, PhD, James Beck, MD, PhD, H.S. Micklem, DPhil, Chelsa Green Publishing, ISBN 97816035852872, 2010

THE COUNCIL OF CANADIANS / LE CONSEIL DES CANADIENS

March 29, 2012

Dear Mayor Bob Bratina and Hamilton City Councillors:

The Council of Canadians is Canada's largest member-based advocacy organization with tens of thousands of members and over 70 community-based chapters across the country. We are a social justice organization and address environmental issues through an environmental justice perspective.

Maude Barlow, the National Chairperson of the Council of Canadians, also served as Senior Advisor on Water to the 63rd President of the United Nations General Assembly (2008-2009).

The Council of Canadians is opposed to the fluoridation of drinking water. We are concerned by the health and environmental impacts associated with it.

Drinking water is fluoridated in Canada, the United States and Australia, but almost nowhere else in the world. Western Europe and Japan have almost no fluoridated water supplies.

We are working with the Quebec-based group Eau Secours which is opposing the Charest government's plans to increase the fluoridation of water there from about 3 per cent to 50 per cent. We encourage our chapters across the country to promote local debate and move municipal resolutions in their community on this issue.

Water is a commons – a shared entity – and open dialogue and encouraging public participation in issues affecting water quality are critical to ensuring clean, safe drinking water for current and future generations. We applaud Tony Matthews and others' initiatives to bring this important matter before the Hamilton Board of Health. We also applaud your openness to hear concerns from the residents of Hamilton.

We understand that the Board of Health will discuss this issue on April 16th, 2012. We appreciate your consideration on this issue and the protection of safe drinking water and human health in the City of Hamilton.

Thank you for your attention into this matter.

Sincerely,

Maude Barlow
National Chairperson
Council of Canadians

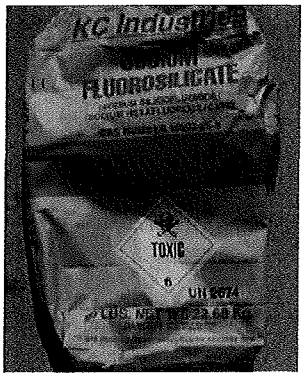
Emma Lui
Water Campaigner
Council of Canadians

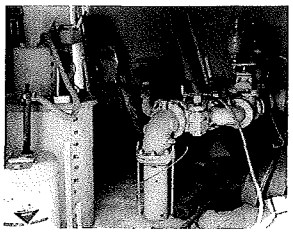
700-170 Av. Laurier Ave West/Ouest, Ottawa, Ontario K1P 5V5
Tel: (613) 233-2773, Fax/Téléc: (613) 233-6776
www.canadians.org inquiries@canadians.org

Fluoridation in Hamilton - WHY it must STOP NOW

The question I have not heard an answer to.....

What is the fate of fluoride in the human body and in our environment?





Fluoride

According to the handbook, Clinical Toxicology of Commercial Products, *fluoride is more poisonous than lead and just slightly less poisonous than arsenic. It is a cumulative poison that accumulates in bone over the years.*

- 5 g of fluoride is a *lethal* dose
- this bag alone can kill 4,536 people

No disease has ever been linked to a fluoride deficiency.

There are more than 180 Symptoms of Fluoride Poisoning.

A presentation and Urgent appeal from Hamilton resident, George Pastoric, Hydro-Logic Environmental April 16, 2012

Fluoride is *more* poisonous than lead and just slightly less poisonous than arsenic yet FAVORED to be allowed to discharge TEN times more - WHY?

Sewer Use By-law Discharge Limits* for a Select Group of Common Contaminants (figures in mg/L)

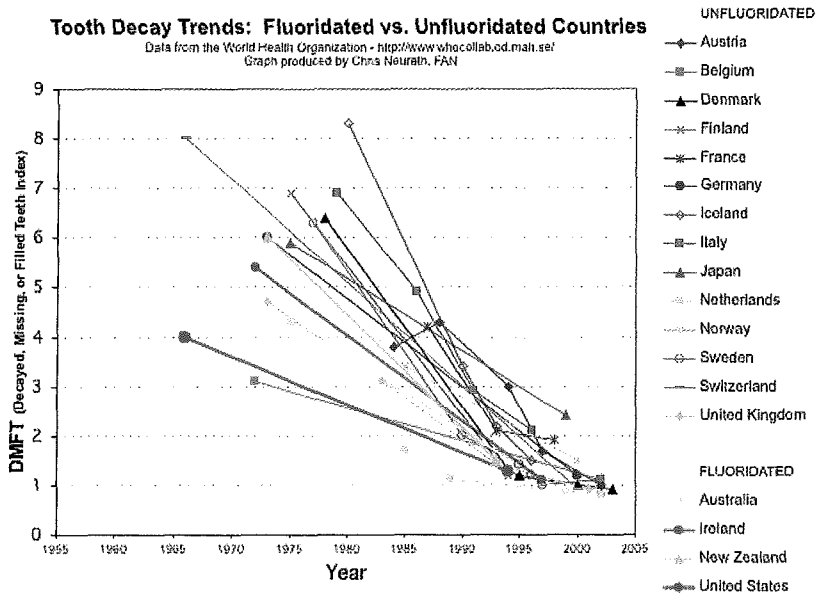
Pollutant	Toronto	Kingston	Windsor	MOE
Arsenic	1	1	1	1
Benzene	0.01	0.01	No limit°	0.01
Bis phthalate	0.012	0.012	No limit°	No limit°
BOD	300	300	400	300
Cadmium	0.7	0.7	2	0.7
Chromium Total	4	4	5	5
Copper	2	2	5	3
Fluoride	10	10	10	10
Hexachlorobenzene	0.0001	0.0001	No limit°	No limit°
Lead	1	1	5	2
Mercury	0.01	0.01	0.1	0.05
Nickel	2	2	5	3
Nonylphenol ethoxylates	0.02	0.01	No limit°	No limit°
Oil/Grease – Organic	150	150	120	150
Phosphorus	10	10	30	10
Suspended Solids	350	350	500	350
Trichloroethylene	0.4	0.07	No limit°	0.07
Zinc	2	2	5	3

* Limits for sanitary and combined sewers.

°Specific limit is not listed in the bylaw. General limit may apply as a result of provincial objectives/guidelines.

If this is not based on toxicity, care for the environment, what then?

WATER FLUORIDATION IS NOT EFFECTIVE



Reductions in Decay Rates has nothing to do with Fluoridation, therefore the practice is unnecessary!

As stated by Dr. Peter Mansfield, a physician from the UK and advisory board member of the recent government review of fluoridation (*McDonagh et al 2000*):

"No physician in his right senses would prescribe *for a person he has never met, whose medical history he does not know*, a substance which is intended to create bodily change, with the advice: 'Take as much as you like, but you will take it for the rest of your life because some children suffer from tooth decay. ' It is a preposterous notion."

In fact, no physician did –

Meet the man who we can thank for fluoridation– Edward Bernays

Edward Louis Bernays

In the early 1920s

Born	November 22, 1891 Vienna, Austria
Died	March 9, 1995 (age 103) Cambridge, Massachusetts, United States
Occupation	Public relations, advertising

Edward Louis Bernays

A publicist - "***the father of public relations***"

Nephew of Sigmund Freud

felt "manipulation was necessary" ..... as a result of the "herd instinct"

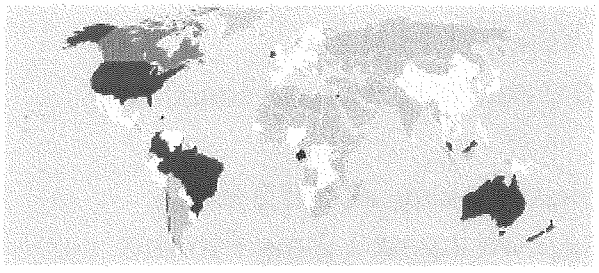
Wrote a book entitled "**Propaganada**"

Bernays helped the Aluminum Company of America (Alcoa) and other special interest groups to convince the American public that water fluoridation was safe and beneficial to human health. This was achieved by <u>using</u> the American Dental Association in "a highly successful media campaign".

He was <u>NOT</u> a Doctor or Dentist

Why did we get involved in this?

http://en.wikipedia.org/wiki/Edward_Bernays



Percentage of population receiving fluoridated water, including both artificial and natural fluoridation.[18]

- 80–100%
- 60–80%
- 40–60%
- 20–40%
- 1–20%
- < 1%
- unknown

According to Health Canada, 45.1% of Canadians drink fluoridated public water.
<u>Canada is one of the most fluoridated countries in the world.</u>
In comparison, only 5.7% of the world's population has their public water supply fluoridated
13 cities have recently stopped
Let's be #14!

Look who's fluoridating!

Can we TRULY say that after 47 years, our population enjoys dental health far ahead of non-fluoridated parts of the world WITHOUT any detraction from TOTAL HEALTH?

Was there a holistic review?

Could there possibly be other impacts of this practice?

Is it REALLY safe, is there <u>no</u> evidence, or is there simply denial?

http://fluoridation.com/c-country.htm

Country	Fluoridation Status
China	BANNED: "not allowed"
Austria	REJECTED: "toxic fluorides" NOT added
Belgium	REJECTED: encourages self-determination – those who want fluoride should get it themselves.
Finland	STOPPED: "...do not favor or recommend fluoridation of drinking water. There are better ways of providing the fluoride our teeth need." A recent study found ..."no indication of an increasing trend of caries...."
Germany	STOPPED: A recent study found no evidence of an increasing trend of caries
Denmark	REJECTED: "...toxic fluorides have never been added to the public water supplies in Denmark."
Norway	REJECTED: "...drinking water should not be fluoridated"
Sweden	BANNED: "not allowed". No safety data available!
The Netherlands	Inevitably, whenever there is a court decision against fluoridation, the dental lobby pushes to have the judgement overturned on a technicality or they try to get the laws changed to legalize it. Their tactics didn't work in the vast majority of Europe.
Hungary	STOPPED: for technical reasons in the '60s. However, despite technological advances, Hungary remains unfluoridated.
Japan	REJECTED: "...may cause health problems...." The 0.8-1.5 mg regulated level is for calcium-fluoride, not the hazardous waste by-product which is added with artificial fluoridation.

"In 1978, the West German Association of Gas & Water Experts rejected fluoridation for legal reasons and because *'the so-called optimal fluoride concentration of 1 mg per L is close to the dose at which long-term damage [to the human body] is to be expected.'* "

WASTEFUL!

Fluoridating 150 times more than we consume?

We drink 8-8 oz glasses a day, about 2 litres

At dosing of 0.6 mg/l we ingest 1.2 mg F in this

We pay to fluoridate 300 litres per person per day

yet 298 litres goes straight to the environment!

This is ~150 times *more than is necessary* for ingestion – it is 99.7% of what we fluoridate and we just waste it. *Why would we do this?*

Would we actually FUND a program that is only 0.3% cost effective? .....and since 1965?

And then..... These little numbers ADD UP.....

SINFUL! – POLLUTING! our ***precious*** fresh water resources *needlessly*!

Without "beneficial dental use to our bodies" at all, 150 times more than what we ingest is dosed into our potable water and then wasted straight to our receiving waters

This year Hamilton will put about 33,933 kg of Fluoride directly into the lake (that's 33.9 Metric Tonnes)

This year Canadians will put about 997,784 kg of Fluoride directly into our receiving waters (997 Metric Tonnes)

And it does not go anywhere, it simply accumulates, as current technology cannot take fluoride out!

Beware forseeable future COT?!

What kind of people are we that would accept paying taxes to experience 180 symptoms of fluoride poisoning while we dumb ourselves down and poison our own water supply?

Our Generation - in only 1 generation The wisdom of our legacy?

As Canadians, in ONE generation, we "start" this ?caring? practice and put 46,000 Metric Tonnes of Fluoride into our receiving waters as pollution and WE PAY FOR THIS through our taxes directed by the leadership of this effort who we trusted to take care of us

We have paid $1,000,000,000 so far, to waste, to pollute, poison our own wells
(One Billion Dollars)

HARMFUL!

Fluoride - an extremely neurotoxic chemical added to drinking water that interrupts the basic function of nerve cells in the brain causing docile submissive behaviour and IQ devastation

FLUORIDE AND AGING

Austrian researchers proved in the 1970s that as **little as 1 ppm fluoride** concentration can disrupt DNA repair enzymes by 50%. When DNA can't repair damaged cells, ***we get old fast.*** (Klein)

http://www.enwaterment.com/page/Hydration/Fluoridation - (Dr. Emoto's Water Messages)

180 Symptoms of Fluoride Poisoning

http://poisonfluoride.com/pfpc/html/symptoms.html - 175 footnotes

24th paper confirms: Fluoride In Water Linked To Lower IQ In Children - December 23, 2010 (how much doubt do we *need*?)

http://www.wateronline.com/doc.mvc/Fluoride-In-Water-Linked-To-Lower-IQ-In-0001?user=2392942&source=nl:29601

Fluoride is the most acidic and electron negative of all elements. Fluoride aggressively seeks out lead and dissolves it, especially in acidic, soft water.

Fluoride accelerates **lead** corrosion and increases **lead** in drinking water.

What kind of people are we that would accept paying taxes to experience 180 symptoms of fluoride poisoning while we dumb ourselves down and poison our own water supply?

UNETHICAL!

Was there martial law in 1965? My consent? My freedom to choose? My rights to clean water for 47 years lost to protect someone else? WHO?

Do I not have a right to clean water? Why did we have to "fix" our clean water, which was not broken in the first place? Shouldn't dental care be done elsewhere?

Fluoridation is UNETHICAL because:

1) It violates the individual's right to informed consent to medication.
2) The municipality cannot control the dose of the patient.
3) The municipality cannot track each individual's response.
4) It ignores the fact that some people are more vulnerable to fluoride's toxic effects than others. Some people will suffer while others may benefit.
5) It violates the Nuremberg code for human experimentation.

What about Doctors? Are cities not competing with Doctors then? WITHOUT a Hippocratic Oath? Is this a wise position to be in for a city?

We must forgive ourselves today and move on.

This practice is wasteful, polluting and denies us all our rights to clean water.

We can vote this out now and I URGE you to free us!

Reasons to End Fluoridation *NOW*

Summary

- Questionable health benefits
- MUCH evidence emerging of health risk (Doubt!!)
- Wasteful expenditure of tax payers money in questionable execution (150x waste, ingestion, not topical under care of dental profession, accelerates lead)
- Blatantly wasteful and polluting, 99.7%TAXES=POLLUTION? right to our water supply where it is NOT easy to deal with (how to get this cat back into the bag?!)
- Shameful, thoughtless process
- FUTURE COSTS and Liabilities!?

Recommendations

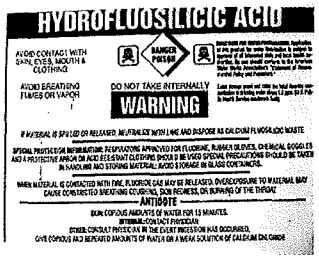
- Give us clean water first.
- Educate and allow self-determination

If there is doubt, we MUST leave it out!

"I know of absolutely no, and I mean absolutely no means of prevention that would save so many lives as simply to stop fluoridation, or don't start it where it is otherwise going to be started. There you might save 30,000 or 40,000 or 50,000 lives a year, cancer lives. That is an awful lot of lives a year."

Dr. Dean Burk Ph.D. (34 years at the National Cancer Institute). Judicial hearing, January 14, 1982.

http://en.wikipedia.org/wiki/Dean_Burk



Dean Burk (March 21, 1904 – October 6, 1988) was an American biochemist: a co-discoverer of biotin, medical researcher, and a cancer researcher at the Kaiser Wilhelm Institute and the National Cancer Institute. In 1934, he developed the Lineweaver–Burk plot together with Hans Lineweaver.
After retiring from the NCI in 1974 Dean Burk remained active. He devoted himself to his opposition to water fluoridation. According to Burk "fluoridation is a form of public mass murder."

WHY would Doctors talk this way? ***Is there at least doubt?***

Education then, beyond all other devices of human origin, is the great equalizer of the conditions of men, the balance-wheel of the social machinery. -Horace Mann

Doctors and Dentists who have sworn the Hippocratic Oath, provide us with personalized health care - not propagandists working with chemical companies

The responsibility for proper health care cannot be delegated to municipal works authorities

Low initial cost does not over-ride proper medical care, responsibility or attention to detail from *any* and *ALL* angles

Great responsibilities are inherent in the topics we discuss today, as well as great liabilities for the assumptions that are made

Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has.

Margaret Mead

US anthropologist & popularizer of anthropology (1901 - 1978)

If in doubt, leave it out!

Fluoride Poisoning Symptoms - The First 11

Symptoms/Associations

(NOTE: This table was originally published in 1998. The links are no longer active)

see also: History

"Though apparently vague and non-specific, most of the symptoms of fluoride toxicity point towards some kind of profound metabolic dysfunction, and are strikingly similar to the symptoms of Hypothyroidism."
(Dental Fluorosis Medical Module, Case Study for the 4th Year Course in Ecosystem Health at UWO - University of Western Ontario, 2002)

FLUORIDE POISONING	THYROID DYSFUNCTION (Iodine Deficiency Disorders)
• Abnormal Sweating (18)	• Abnormal Sweating (154, 155, 156)
• Acne (2,3)	• Acne (52)
• ADHD/Learning Disorders (4,7)	• ADHD/Learning Disorders (54)
• Allergies (2)	• Allergies (52)
• Alopecia (Hair-loss)(18)	• Alopecia (151)
• Alzheimer's Disease (5,6,46)	• Alzheimer's Disease (98)
• Anaphylactic Shock (2)	• Anaphylactic Shock (124)
• Anemia (15)	• Anemia (67)
• Apnea (Cessation of breath)	• Apnea (52)
• Aorta Calcification (2)	• Aorta Calcification (100)
• Asthenia (Weakness) (18)	• Asthenia (97)

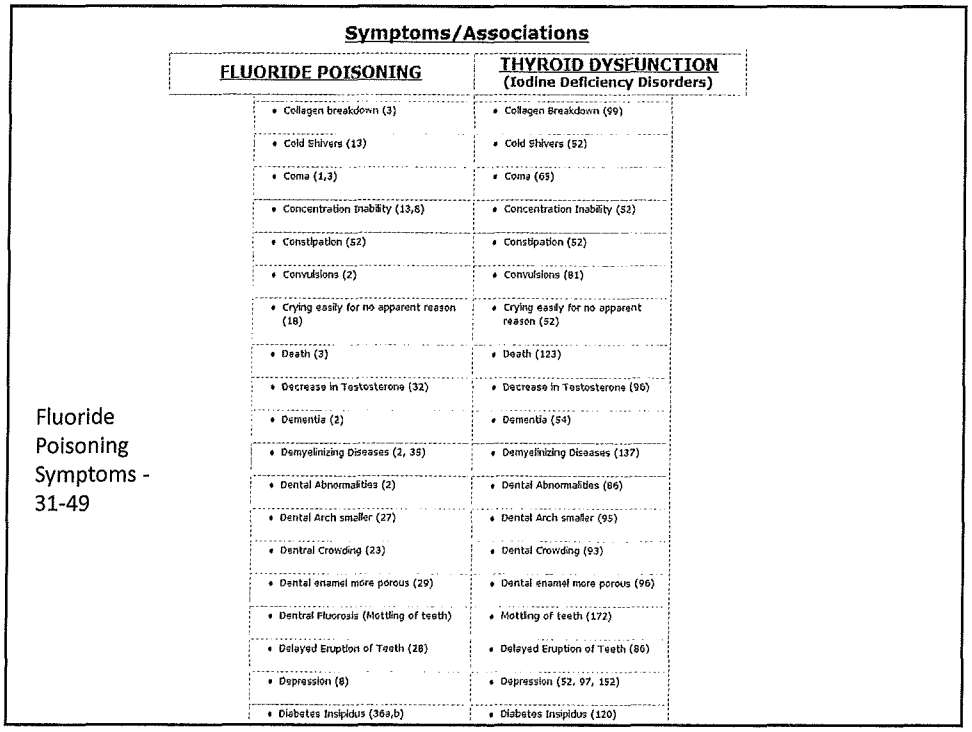
http://poisonfluoride.com/pfpc/html/symptoms.html - 175 footnotes

Fluoride Poisoning Symptoms - 12-30

Symptoms/Associations

FLUORIDE POISONING	THYROID DYSFUNCTION (Iodine Deficiency Disorders)
• Asthma (2)	• Asthma (129)
• Atherosclerosis (3)	• Atherosclerosis (59)
• Arthralgia (2)	• Arthralgia (58)
• Arthritis (8, 13)	• Arthritis (52, 58)
• Ataxia (2)	• Ataxia (66)
• Autism (169)	• Autism (170, 171)
• Back Pain (2)	• Back Pain (153)
• Behavioural Problems (3)	• Behavioural Problems (54)
• Birth Defects (5)	• Birth Defects (53)
• Blind Spots (3)	• Blind Spots (52)
• Body temperature disturbances (13)	• Body temperature disturbances (52)
• Breast Cancer (5)	• Breast Cancer (147)
• Cachexia (wasting away)(2)	• Cachexia (133)
• Carpal Tunnel Syndrome (5)	• Carpal Tunnel Syndrome (52)
• Cataracts (2)	• Cataracts (69)
• Change in blood pressure(+/-) (2)	• Change in blood pressure (52)
• Chest pain (26)	• Chest pain (52)
• Cholelithiasis (Gallstones)(2)	• Cholelithiasis (134)
• Chronic Fatigue Syndrome (2)	• Chronic Fatigue Syndrome (52)

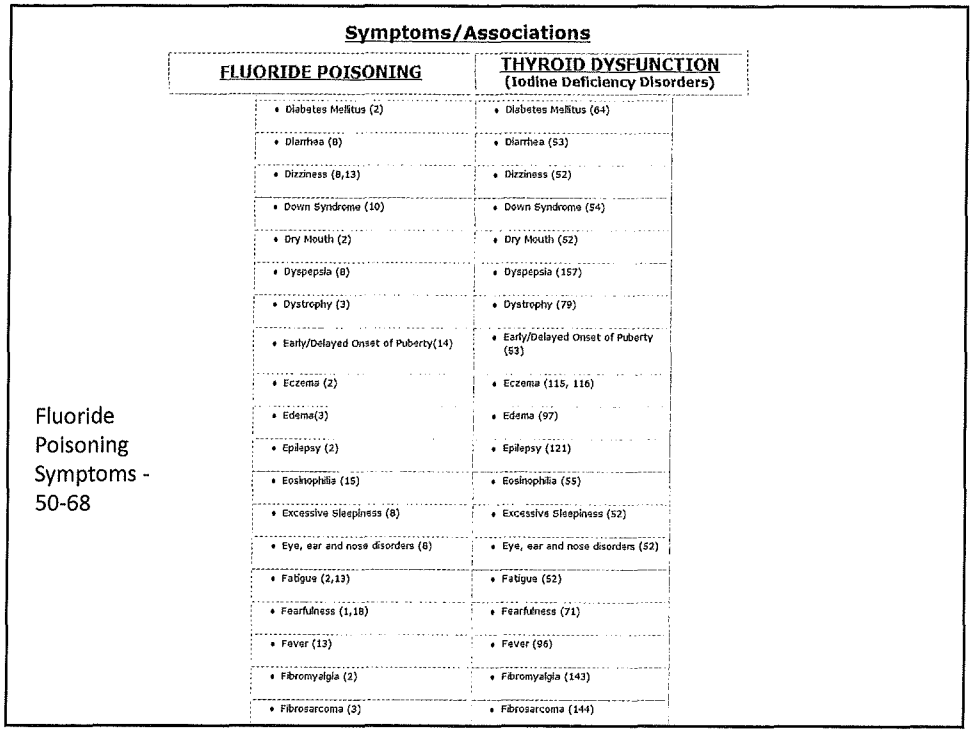
Fluoride Poisoning Symptoms - 31-49



Symptoms/Associations

FLUORIDE POISONING	THYROID DYSFUNCTION (Iodine Deficiency Disorders)
• Collagen breakdown (3)	• Collagen Breakdown (99)
• Cold Shivers (13)	• Cold Shivers (52)
• Coma (1,3)	• Coma (69)
• Concentration Inability (13,6)	• Concentration Inability (52)
• Constipation (52)	• Constipation (52)
• Convulsions (2)	• Convulsions (81)
• Crying easily for no apparent reason (18)	• Crying easily for no apparent reason (52)
• Death (3)	• Death (123)
• Decrease in Testosterone (32)	• Decrease in Testosterone (96)
• Dementia (2)	• Dementia (54)
• Demyelinizing Diseases (2, 35)	• Demyelinizing Diseases (137)
• Dental Abnormalities (2)	• Dental Abnormalities (86)
• Dental Arch smaller (27)	• Dental Arch smaller (95)
• Dental Crowding (23)	• Dental Crowding (93)
• Dental enamel more porous (29)	• Dental enamel more porous (96)
• Dental Fluorosis (Mottling of teeth)	• Mottling of teeth (172)
• Delayed Eruption of Teeth (28)	• Delayed Eruption of Teeth (86)
• Depression (8)	• Depression (52, 97, 152)
• Diabetes Insipidus (36a,b)	• Diabetes Insipidus (120)

Fluoride Poisoning Symptoms - 50-68



Symptoms/Associations

FLUORIDE POISONING	THYROID DYSFUNCTION (Iodine Deficiency Disorders)
• Diabetes Mellitus (2)	• Diabetes Mellitus (64)
• Diarrhea (8)	• Diarrhea (53)
• Dizziness (8,13)	• Dizziness (52)
• Down Syndrome (10)	• Down Syndrome (54)
• Dry Mouth (2)	• Dry Mouth (52)
• Dyspepsia (8)	• Dyspepsia (157)
• Dystrophy (3)	• Dystrophy (79)
• Early/Delayed Onset of Puberty(14)	• Early/Delayed Onset of Puberty (63)
• Eczema (2)	• Eczema (115, 116)
• Edema(3)	• Edema (97)
• Epilepsy (2)	• Epilepsy (121)
• Eosinophilia (15)	• Eosinophilia (55)
• Excessive Sleepiness (8)	• Excessive Sleepiness (52)
• Eye, ear and nose disorders (8)	• Eye, ear and nose disorders (52)
• Fatigue (2,13)	• Fatigue (52)
• Fearfulness (1,18)	• Fearfulness (71)
• Fever (13)	• Fever (96)
• Fibromyalgia (2)	• Fibromyalgia (143)
• Fibrosarcoma (3)	• Fibrosarcoma (144)

Fluoride Poisoning Symptoms - 69-87

Symptoms/Associations

FLUORIDE POISONING	THYROID DYSFUNCTION (Iodine Deficiency Disorders)
• Fibrosis (3)	• Fibrosis (76a,b)
• Fingernails:Lines/Grooves (1)	• Fingernails:Lines/Grooves (97)
• Fingernails:Brittle (1,3)	• Fingernails:Brittle (97)
• Forgetfulness (3)	• Forgetfulness (97)
• Gastro-disturbances (8)	• Gastro-disturbances (52)
• Gastric Ulcers (2)	• Gastric Ulcers (92)
• Giant Cell Formation	• Giant Cell Formation (135)
• Gingivitis (19, 173)	• Gingivitis (72)
• Glaucoma (174)	• Glaucoma (175)
• Goitre (2)	• Goitre (52)
• Growth Disturbances (1)	• Growth Disturbances (53)
• Headache (2)	• Headache (118)
• Hearing Loss (5)	• Hearing Loss (165)
• Heart Disorders	• Heart Disorders (52)
• Heart Failure (3)	• Heart Failure (109, 110)
• Heart Palpitations (13)	• Heart Palpitations (52)
• Hepatitis (2)	• Hepatitis (136)
• Hemorrhage (1,2)	• Hemorrhage (85)
• Hives (3)	• Hives (108)

Fluoride Poisoning Symptoms - 88-106

Symptoms/Associations

FLUORIDE POISONING	THYROID DYSFUNCTION (Iodine Deficiency Disorders)
• Hoarsenss (18)	• Hoarseness (97)
• Hyperparathyroidism (2)	• Hyperparathyroidism (82)
• Hypertension (8)	• Hypertension (52, 60)
• Hypoplasia (40)	• Hypoplasia (150)
• Immunosuppression (3)	• Immunosuppression (52)
• Impotence (3)	• Impotence (97)
• Incoherence (8)	• Incoherence (54)
• Infertility (2,3)	• Infertility (87)
• Inflammatory Bowel Disease	• Inflammatory Bowel Disease (142)
• Inner Ear Disorders (2,5)	• Inner Ear Disorders (139)
• Irritability (18)	• Irritability (160)
• Joint Pains (8)	• Joint Pains (52)
• Kidney Failure (2)	• Kidney Failure (125)
• Lack of Energy (8)	• Lack of Energy (52)
• Lack of Co-ordination (2)	• Lack of Co-ordination (52)
• Loss of Appetite (2)	• Loss of Appetite (97)
• Loss of Consciousness (2)	• Loss of Consciousness (138)
• Loss of IQ (25)	• Loss of IQ (83)
• Loss of Spermatogenesis (33)	• Loss of Spermatogenesis (102)

Fluoride Poisoning Symptoms - 107-124

Symptoms/Associations

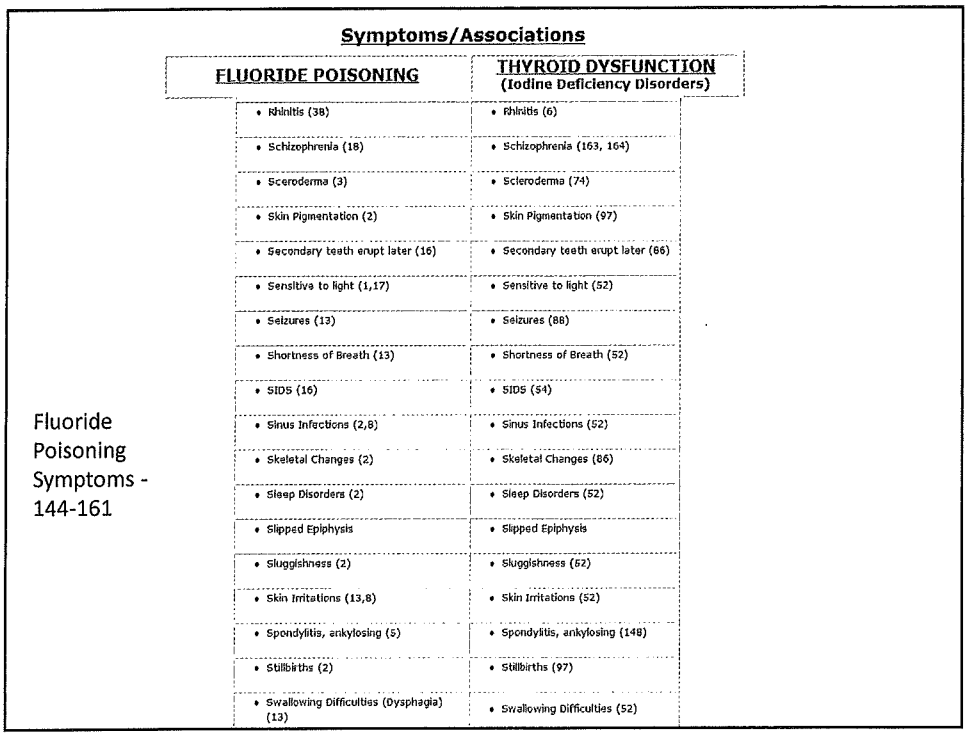
FLUORIDE POISONING	THYROID DYSFUNCTION (Iodine Deficiency Disorders)
• Low Birth Weight (5)	• Low Birth Weight (158)
• Lung Cancer (3)	• Lung cancer (145)
• Lupus (3)	• Lupus (101)
• Magnesium Deficiency (2)	• Magnesium Deficiency (94)
• Memory Loss (13)	• Memory Loss (52)
• Mental Confusion (20)	• Mental Confusion (52,54)
• Migraine (8)	• Migraine (52)
• Monisiliasis (Candidasis) (162)	• Monisiliasis (Candidasis) (161)
• More fluorosis/high altitudes (30,31)	• More hypothyroidism/high altitudes (96)
• Mouth Sores (2)	• Mouth Sores (87)
• Myalgia (Muscle Pain) (2)	• Myalgia (58)
• Myotrophy (Muscle wasting) (2)	• Myotrophy (58)
• Multiple Sclerosis (4)	• Multiple Sclerosis (126)
• Muscle Cramps (3)	• Muscle Cramps (58)
• Muscle Stiffness (3)	• Muscle Stiffness (58)
• Muscle Weakness (2)	• Muscle Weakness (57)
• Muscoskeletal Disease (3)	• Muscoskeletal Disease (80,57)
• Nausea (8,13)	• Nausea (52)

Fluoride Poisoning Symptoms - 125-143

Symptoms/Associations

FLUORIDE POISONING	THYROID DYSFUNCTION (Iodine Deficiency Disorders)
• Osteoarthritis (2)	• Osteoarthritis (62)
• Osteoporosis (2)	• Osteoporosis (62)
• Osteosarcoma (22b)	• Osteosarcoma (104)
• Optic Neuritis (2)	• Optic Neuritis (68)
• Oral Squamous Cell Carcinoma (22)	• Oral Squamous Cell Carcinoma (103)
• Otosclerosis	• Otosclerosis
• Parkinson's Disease (5)	• Parkinson's Disease (110,111)
• Pins & Needles (18)	• Pins & Needles (52)
• Polydipsia (2)	• Polydipsia (64)
• Polyneuropathy (2)	• Polynsuropathy (57)
• Polyurea (2)	• Polyurea (64)
• Pyelocystitis (2)	• Pyelocystitis (63)
• Premature Delivery (16)	• Premature Delivery (52)
• Pruritis (Itchy Skin) (3)	• Pruritis (113)
• Pulminary Edema (2)	• Pulminary Edema (114)
• Recurring Colds (18)	• Recurring Colds (52)
• Respiratory Complications (13,8)	• Respiratory Complications (52)
• Restlessness (13)	• Restlessness (52)
• Retinitis (2)	• Retinitis (128)

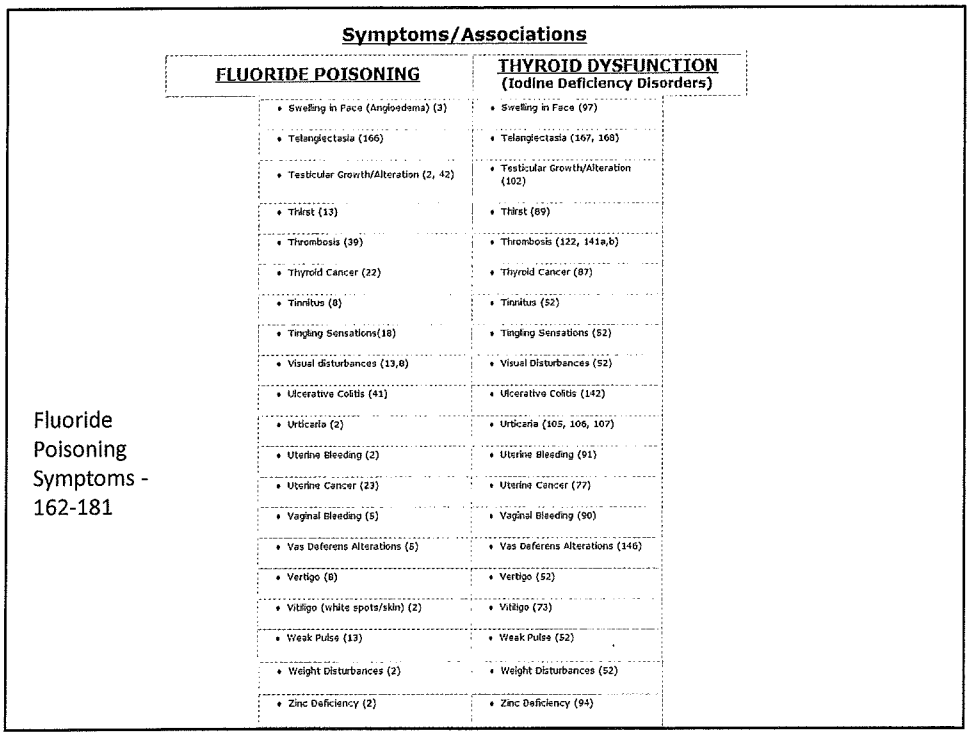
Fluoride Poisoning Symptoms - 144-161



Symptoms/Associations

FLUORIDE POISONING	THYROID DYSFUNCTION (Iodine Deficiency Disorders)
• Rhinitis (38)	• Rhinitis (6)
• Schizophrenia (18)	• Schizophrenia (163, 164)
• Sceroderma (3)	• Scleroderma (74)
• Skin Pigmentation (2)	• Skin Pigmentation (97)
• Secondary teeth erupt later (16)	• Secondary teeth erupt later (66)
• Sensitive to light (1,17)	• Sensitive to light (52)
• Seizures (13)	• Seizures (88)
• Shortness of Breath (13)	• Shortness of Breath (52)
• SIDS (16)	• SIDS (54)
• Sinus Infections (2,8)	• Sinus Infections (52)
• Skeletal Changes (2)	• Skeletal Changes (86)
• Sleep Disorders (2)	• Sleep Disorders (52)
• Slipped Epiphysis	• Slipped Epiphysis
• Sluggishness (2)	• Sluggishness (52)
• Skin Irritations (13,8)	• Skin Irritations (52)
• Spondylitis, ankylosing (5)	• Spondylitis, ankylosing (148)
• Stillbirths (2)	• Stillbirths (97)
• Swallowing Difficultiss (Dysphagia) (13)	• Swallowing Difficulties (52)

Fluoride Poisoning Symptoms - 162-181



Symptoms/Associations

FLUORIDE POISONING	THYROID DYSFUNCTION (Iodine Deficiency Disorders)
• Swelling in Face (Angioedema) (3)	• Swelling in Face (97)
• Telangiectasia (166)	• Telangiectasia (167, 168)
• Testicular Growth/Alteration (2, 42)	• Testicular Growth/Alteration (102)
• Thirst (13)	• Thirst (89)
• Thrombosis (39)	• Thrombosis (122, 141a,b)
• Thyroid Cancer (22)	• Thyroid Cancer (87)
• Tinnitus (8)	• Tinnitus (52)
• Tingling Sensations(18)	• Tingling Sensations (52)
• Visual disturbances (13,8)	• Visual Disturbances (52)
• Ulcerative Colitis (41)	• Ulcerative Colitis (142)
• Urticaria (2)	• Urticaria (105, 106, 107)
• Uterine Bleeding (2)	• Uterine Bleeding (91)
• Uterine Cancer (23)	• Uterine Cancer (77)
• Vaginal Bleeding (5)	• Vaginal Bleeding (90)
• Vas Deferens Alterations (5)	• Vas Deferens Alterations (146)
• Vertigo (8)	• Vertigo (52)
• Vitiligo (white spots/skin) (2)	• Vitiligo (73)
• Weak Pulse (13)	• Weak Pulse (52)
• Weight Disturbances (2)	• Weight Disturbances (52)
• Zinc Deficiency (2)	• Zinc Deficiency (94)

Health Canada says we need 8 – 8 oz glasses of WATER a day

water consumption and fluoride					What Health Canada says a person "needs"
					2 litres
Hamilton 2012	0.6 ppm		Health Canada		0.6 ppm or mg/l
water consumption	300 lpd	per person	recommends 8-8 oz		1.2 mg
ingested	2 lpdpp		glasses a day		
not ingested	298 lpd		8 oz =	0.24 l	1.2 mg/day
ingested	0.67%		8 times 8	1.89 l	365 days per year
not ingested	99.33%		say	2 lpd pp	only 438 mg fluoride

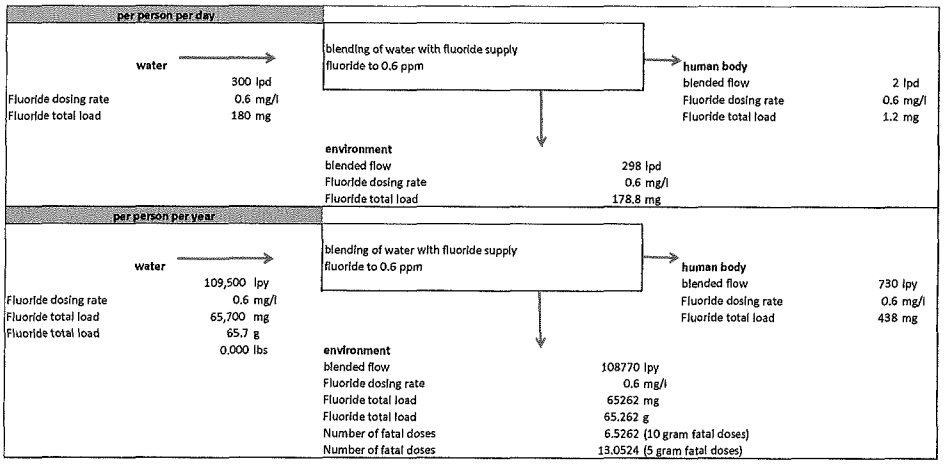
fluoride toothpaste

	say			at 1.2 mg per day	
1000 ppm	100 ml		per tube	83.3	# of days from one tube of tooth paste
1000 ppm	so	1000 mg	per litre		<<<therefore 1.2 ml of toothpaste has enough fluoride for a daily dose, AND it can be applied TOPICALLY - NOT ingested. For one adult, for one year this is less than 5 tubes of toothpaste AND can be used according to actual NEED
	is	100 mg	per 100 ml	a 1:1 ratio!!	
	so	4.38	tubes of toothpaste per person per Year		
		IF they choose to use it			
		AND			
		Dose can be measured to suit			

Since 1970 we have had fluoride toothpaste.

One tube is "enough" fluoride for 83 days, or we can say an adult looking for fluoride would use ~4.4 tubes of toothpaste per year.

Current Water Fluoridation Practice Examined – A Mass Balance



Per person

Current Water Fluoridation Practice Examined – A Mass Balance

Hamilton Population, 519,949 consumer demand per day

based on 300 litres per person per day and population estimate only

water			blending of water with fluoride supply fluoride to 0.6 ppm			human body		
Flow	155,984,700	lpd				blended flow	1,039,898	lpd
Flow	155,985	m3				Fluoride dosing rate	0.6	mg/l
Flow	41	MGD				Fluoride total load	623,939	mg
Fluoride dosing rate	0.6	mg/l						
Fluoride total load	93,590,820	mg	**environment**					
Fluoride total load	94	kg	blended flow	154,944,802	lpd			
			Fluoride dosing rate	0.6	mg/l			
			Fluoride total load	92,966,881	mg			
			Fluoride total load	92,967	g			
			Fluoride total load	93	kg			
			Number of fatal doses	9,297	(10 gram fatal doses)			
			Number of fatal doses	18,593	(5 gram fatal doses)			

Hamilton Population, 519,949 consumer demand per year

based on population estimate only

water			blending of water with fluoride supply *fluoride to 0.6 ppm*			*human body*		
Flow	56,934,415,500	lpy				blended flow	379,562,770	lpy
Flow	56,934,416	m3Y				Fluoride dosing rate	0.6	mg/l
Flow	15,040	MGY				Fluoride total load	227,737,662	mg
Fluoride dosing rate	0.6	mg/l						
Fluoride total load	34,160,649,300	mg	**environment**					
Fluoride total load	34,160.65	kg	blended flow	56,554,852,730	lpd			
Fluoride total load	34	mT	Flow	56,554,853	m3Y			
			Flow	14,940,214,211	MGY			
			Fluoride dosing rate	0.6	mg/l			
			Fluoride total load	33,932,911,638	mg			
			Fluoride total load	33,932,912	g			
			Fluoride total load	33,933	kg	So per year, we as a population put between		
			Fluoride total load	33.9	mT	3.3 and 6.7	MILLION FATAL DOSES	
			Number of fatal doses	3,393,291	(10 gram fatal doses)	into the environment		
			Number of fatal doses	6,786,582	(5 gram fatal doses)	**So HOW is this OK?**		

Hamilton's population today

All of Canada, fluoridation rate per DAY

Population of Canada	33,900,000							
Percentage fluoridated	45.10%							
water			blending of water with fluoride supply fluoride to 0.6 ppm			human body		
(300xpopx%)	4,586,670,000	lpd				blended flow	30,577,800	lpd
Fluoride dosing rate	0.6	*mg/l*				Fluoride dosing rate	0.6	mg/l
Fluoride total load	2,752,002,000	mg				Fluoride total load	18,346,680	mg
	2,752,002	g						
	2,752	kg	**environment**					
	2.752	MT	blended flow	4,556,092,200	lpd			
	6,067.13	lbs	Fluoride dosing rate	0.6	mg/l			
			Fluoride total load	2,733,655,320	mg			
			Fluoride total load	2,733,655	g			
			Fluoride total load	2,734	kg			
			Fluoride total load	2.73	MT			
			Number of fatal doses	273,366	(10 gram fatal doses)			
			Number of fatal doses	546,731	(5 gram fatal doses)			

All of Canada, fluoridation rate per YEAR

Population of Canada	33,900,000							
Percentage fluoridated	45.10%							
water			blending of water with fluoride supply fluoride to 0.6 ppm			human body		
(300xpopx%x365)	*1,674,134,550,000*	*lpd*				*blended flow*	11,160,897,000	lpd
Fluoride dosing rate	0.6	mg/l				Fluoride dosing rate	0.6	mg/l
Fluoride total load	1,004,480,730,000	mg				Fluoride total load	6,696,538,200	mg
	1,004,480,730	g						
	1,004,481	kg	**environment**					
	1,004.481	MT	blended flow	1,662,973,653,000	lpd			
	2,214,501.32	lbs	Fluoride dosing rate	0.6	mg/l			
			Fluoride total load	997,784,191,800	mg			
			Fluoride total load	997,784,192	g			
			Fluoride total load	997,784	kg			
			Fluoride total load	997.78	MT			
			Number of fatal doses	99,778,419	(10 gram fatal doses)			
			Number of fatal doses	199,556,838	(5 gram fatal doses)			

Assumptions* (best available information)

Canadian consumption of fresh water is 300 litres per person per day (estimates to 450 lpd in the Great Lakes Area)

Fluoridation rate is 0.6 mg/l, or ppm

Population of Canada given at 33,900,000

Percentage of Canadian population that is fluoridated is 45.1%

Fate of Fluoride – Ingestion into Human Bodies
(only about 1/150th of what we purchase and put through our systems and into the environment)

Fluoride Summary per day, per year and 47 year term		Ingestion by Humans mg	g	kg	MT
Per person	per day	1.2	0.0012		
	per year	438	0.438	0.000438	
	times 47	20,586	21	0.020586	
Hamilton Population	per day	623,939	624	0.623939	
519,949	per year	**227,737,662**	**227,738**	**228**	
	times 47	10,703,670,114	10,703,670	10,704	10.7
Canadian Fluoridated Population	per day	18,346,680	18,347	18	0.018
33,900,000	per year	6,696,538,200	6,696,538	6,697	**6.7**
	times 47	314,737,295,400	314,737,295	314,737	314.7

Fate of Fluoride – Waste Directly the Environment via our pipes, lands, crops and waterways
150 times MORE than we ingest – wasteful and polluting and a TAX BURDEN and Liability

Fluoride Summary per day, per year and 47 year term		F* Wasted - Pollution to the Environment mg	g	kg	MT
Per person	per day	178.8			
	per year	65,652	66		
	times 47	3085644	3,086	3	
Hamilton Population	per day	92,966,881	92,967	93	
519,949	per year	**33,932,911,638**	**33,932,912**	**33,933**	**33.9**
	times 47	1,594,846,846,986	1,594,846,847	1,594,847	1,594.8
Canadian Fluoridated Population	per day	2,733,655,320	2,733,655	2,734	**2.7**
33,900,000	per year	997,784,191,800	997,784,192	997,784	**997.8**
	times 47	46,895,857,014,600	46,895,857,015	46,895,857	46,895.9
Canada's contribution to our water resources		#5g	#10g		
997,784,192	**g/year**	199,556,838	99,778,419	#FD	
46,895,857,015	**g/47 YLC**[1]	9,379,171,403	4,689,585,701	#FD	

If we paid for only what we ingested, it would be 1/150th of the total cost AND we would not contribute to pollution!!!

So every year Canada's fluoride discharge to the environment, where it has no exit, somewhere between 99.7 and 198 MILLION FATAL DOSES of Fluoride

Over a 47 year time frame, this equates to somewhere between 4.7 and 9.4 BILLION FATAL DOSES of Fluoride

[1] Based on current rates

How can we deliver so much toxic fluoride to the environment and say there is no effect?

LIFETIME Fluoride Mass Balance					
Guesstimate, say an average sales to the Canadian municipal water fluoridation industry at		1,000	MT	per year	
Since 1965, to 2012		47		years	
Total tonnes		47,000	MT	WF to date	
	Number of fatal doses	4,700,000,000		(10 gram fatal doses)	4.7 BILLION
	Number of fatal doses	9,400,000,000		(5 gram fatal doses)	9.4 BILLION
Program Lifecycle Landfill Alternative Costs for Disposal of Fluoride by producers without Municipal Exit					
Tipping Fees at $10 per ton		$470,000			
Tipping Fees at $40 per ton		$1,880,000			
WF, Our cost per person per year	$1				
say average population of Canada since 1965	24,000,000				
years since 1965	47				
Cost of Water Fluoridation*	**$1,128,000,000**				
What we PAID Fluoride producers*					

Cost of Water Treatment that effectively removes Fluoride

Membrane plant capital cost estimate	**HAMILTON ONLY**
between	$0.20
and	$0.30
per gallon	
Current Capacity	909,000 m3/day
	240 MGD
Estimated Capital Cost	$48,000,000 low
	$72,000,000 high
Membrane plant capital cost estimate	**ALL CANADA**
between	$0.20
and	$0.30
per gallon	
Current Capacity	4,586,670 m3/day
	1212 MGD
Estimated Capital Cost	$242,300,000 low
	$363,500,000 high

Artificial Water Fluoridation

Environmental Effects & Legal Implications

Peter Ormond M.Eng, MBA, P. Eng
Co-chair, Great Lakes & Water Group, CoC Hamilton
CEO, Green Party of Canada, Hamilton Centre Riding
Host: GreenTV—Newsclip TV
Host: Green Sense—93.3 CFMU

Hydrofluorosilicic Acid: derived from scrubbers of phosphate fertilizer production sites —NOT pharmaceutical grade

"Hazardous Waste"
Hazardous Waste Act

"Toxic Substance" (Anthropogenic, Toxic, Persistent, Bioaccumulative)
Canadian Environmental Protection Act

"Dangerous good/class 8 corrosive substance."
Transport Canada

Contaminants include trace amounts of:

- Arsenic (As)
- Lead (Pb)
- Mercury (Hg)
- Cadmium (Cd)
- Chromium (Cr)
- Radionuclides (Ra, Po)

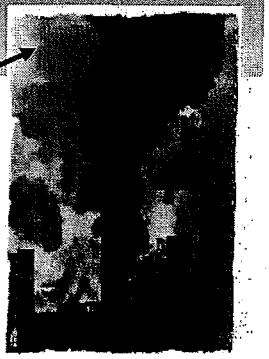
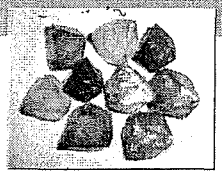


Photo: www.fluoridealert.org

Natural Fluorides vs. Hydrofluorosilicic Acid

NaF (sodium fluoride or villiaumite)

MgF_2 magnesium fluoride or sellaite



20 x MORE TOXIC

CaF2 (calcium fluoride, fluorite or fluorspar)
- Naturally occurring
- Safe to hold with bare hands
- Sparingly soluble in neutral pH water
- Fluoride toxicity reduced by calcium

Acute oral toxicity
-LD 50 = oral rat, 4250 ppm
Source: REAGENTS, INC.–MSDS–CALCIUM FLUORIDE

H2SiF6 (hydrofluorosilicic acid)
- Man-made toxic waste product
- Highly corrosive liquid that requires full personal protective equipment to handle legally
- Fluoride toxicity enhanced by co-contaminants

Acute oral toxicity
-LD 100 = guinea pig, 80 ppm (2 % solution)
Source: Issuing date 06.07.2009 SOLVAY Chemicals

NO NSF60 TOXICOLOGY STUDIES

Turtle Species are currently in Need of Protection?
(Violates Fisheries Act 1985 & Species At Risk

SARA Protected

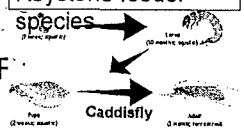
Spiny Softshell Turtle

After dilution:
Hamilton Harbour
F = 0.31 ppm

CWQG Fluoride
< 0.12 ppm

Crayfish

Keystone feeder species

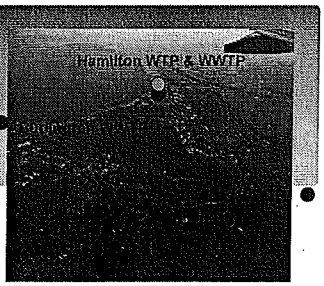


Caddisfly

SARA Protected

Eastern Sand Darter

Hamilton Harbour Area of Concern

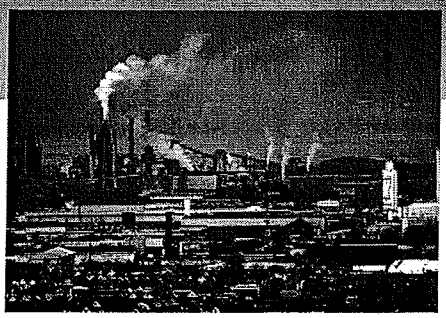


* Recipient of fluorides from 4 WWTPs (and urban runoff)
* Fluorides not removed by wastewater treatment
* <1% treated water consumed for drinking = 99% H_2SiF_6 discharged
* H_2SiF_6 **>450,000 lbs/year** (1 lb/person/year minus rural)
* + Permitted industry loading
* + food, pharmaceuticals, personal care & cleaning products

"... the impacts on the Harbour's aquatic ecosystem, fish and wildlife continue to occur"

Report - Hamilton Harbour – Areas of Concern (2010) Env.Can. and ON MOE

Municipal Water Fluoridation = Industrial F Pollution Smokescreen



AWF makes it impossible to regulate the many industries in Hamilton that discharge fluorides into the combined sewer system & atmosphere

We Have a Duty to Protect the Environment That Sustains Us

* **As of January 1, 2013 Municipal Councillors will be <u>personally</u> responsible and liable for environmental and health damage caused by fluoridation under the Safe Drinking Water Act (2002), Section 19.**
* **Health Canada does not regulate H_2SiF_6. As such, the agency has no standing in the matter. Its endorsements will not shield the City of Hamilton from liability or possible legal action.**

Legal Implications of Fluoridation

* Violates the federal 2002 Species At Risk Act
* Violates the 1999 Canadian Environmental Protection Act
* Violates several pieces of legislation stemming from the federal 1985 Fisheries Act
* Violates Ontario 2002 SDWA Section 20 'Dilution no Defense'
* Violates 1978 Great Lakes Water Quality Agreement (goal - virtual elimination of persistant toxic substances)
* Violates 1997 Binational Toxics Strategy
* Contributes to exceedence Can Water Quality Guideline

Hamilton Has the Power to End AWF Under the Clean Water Act of 2006

* Ontario's Clean Water Act helps protect drinking water from source to tap with a multi-barrier approach **that stops contaminants from entering sources of drinking water – lakes, rivers and aquifers.**
* Ontario's Clean Water Act requires that local communities - through local Source Protection Committees – **assess existing and potential threats to their water, and that they set out and implement the actions needed to reduce or eliminate these threats.**
* Empowers communities to take action to **prevent threats** from becoming significant (i.e. including threats to aquatic life).
* Requires **public participation** on every local source protection plan – the planning process for source protection is open to anyone in the community.
* Requires that **all plans and actions are based on sound science** (i.e. including but not limited to peer-reviewed human health research).

Recommendations

The Precautionary Principle

If an action or policy has a suspected risk of causing harm to the public or to the environment, in the absence of scientific consensus that the action or policy is harmful, the burden of proof that it is not harmful falls on those taking the action.

We recommend the Board of Health Committee insist on:

1. Provision of a full environmental impact assessment and baseline study that was conducted prior to initiation of Artificial Water Fluoridation. None? Stop AWF
2. Continuous downstream monitoring to ensure that levels do not exceed water quality guidelines for protection of aquatic life of 0.12 ppm. Not feasible? Stop AWF
3. A mandate that chemistry of the water discharged into the Hamilton Bay from the Hamilton sewage treatment plant is the same or better than the water that is taken out in terms of protection of aquatic life. Not possible? Stop AWF

Organizations Committed to Environmental Restoration by Ending Artificial Water Fluoridation

* Green Party of Canada
* Canadian Association of Physicians for the Environment
* Council of Canadians
* EPA Headquarters Professionals' Union
* Great Lakes United
* National Research Council
* International Society of Doctors for the Environment
* American Academy of Environmental Medicine
* Environmental Working Group
* Environmental Health Foundation
* Science and Environmental Health Network
* Center for Health, Environment, and Justice
* Goldman Prize winners (2006, 2003, 1997, 1995, 1990)

Thank you for your time

Hamilton Board of Health Meeting

April 16, 2012

Artificial Water fluoridation

Delegation of Sheldon Thomas: 'The Chemical'

Sheldon Thomas
Principal, Clear Water Legacy
www.clearwaterlegacy.com
905 333-9203

Good afternoon, Mr. Mayor and Councillors.

My name is Sheldon Thomas.

I had the great privilege to work in Hamilton's water utility for 26 years. Some of that time was spent as Manager of your Water Distribution System.

Today, I design and deliver Ministry-approved seminars that teach the protection of water quality in the pipes beneath the street.

In all my years here, I never once doubted the quality of Hamilton water.
But I do now.

Hamilton's drinking water is *not* safe. It's not *chemically* safe.

It became unsafe in 1966 when the City began artificial water fluoridation.

The council of '66 would have been told that water fluoridation was well-tested and safe.
Little or nothing would have been said about the new fluoride chemical. [1]

Hamilton's chemical is called 'fluorosilicic acid'.

For starters, this chemical is a highly corrosive, category 1, industrial waste.

It has been added to drinking water for over 60 years, and in that time not one single toxicological test has been done to prove that this adulterated water is safe to drink. [2]

Let me summarize what Hamilton councils have been advised to do for 46 years:

- You fund and operate a billion dollar, world-class, water treatment plant to create some of the finest drinking water on this continent.

- Just before you send it off to your citizens, you top it off with one of the most toxic industrial wastes known to environmental science.

You did it then, and you do it now, because the highest health authorities in the land convinced this City that water fluoridation was necessary.

The dental campaign in this city would not have included the true nature of the fluoridating chemical you would have to live with.

Fluorosilicic acid is not a carefully-designed work of chemistry.

The chemical that arrives at Woodward can be polluted by any of a dozen contaminants, including lead, arsenic, and mercury. **3**
Lead and arsenic are nearly always in the mix.

In a Spectator story last September, Dr. Richardson spoke of "intervention strategies' to deal with lead exposure in this city. **4**

The good doctor is absolutely right. The harm caused by lead poisoning is well known. **5**

What is not well known is that lead enters Hamilton water almost daily by the use of fluorosilicic acid.

It would also be wise to investigate the startling increases in blood-lead uptake that can result when you combine *your fluoridating* chemical with the *disinfection* chemical that is carried throughout your water system.

That combination produces a powerful solvent that can dissolve a lot of lead from the metal of household faucets and from lead-soldered plumbing. **6**

In a city of this age, how many Hamilton homes have older generation high-lead faucets, and hundreds of lead-soldered joints?

The lead and arsenic contaminants in fluorosilicic acid should not be down-played.

Lead is classified as a 'probable human carcinogen'. [7]
Arsenic is classified as an established cause of cancer. [8]

Artificial water fluoridation has added these two carcinogens to Hamilton's drinking water since day one.

Health Canada is very concerned about arsenic. In 2006, it stated that <u>every</u> effort should be made to keep it out of drinking water. [9]

To *add* arsenic in any amount would seem contrary to Health Canada's advice.

Some argue that the arsenic contaminant gets diluted massively by about 240,000 to 1 in drinking water. [10]
That is true, but dilution does not make it disappear.

The National Sanitation Foundation (NSF) states that arsenic typically found in fluorosilicic acid dilutes down to just under 0.5 ppb. [11]

So, how scary is half a part per billion of arsenic?

That's enough to cause an estimated 50 additional cancers in a community the size of Hamilton. [12]

That cancer estimate is the work of the National Resources Defense Council, using data provided by the National Academy of Science. [12]

From your drinking water reports, it appears that Hamilton's water contains arsenic that likely exceeds the calculation done by NSF. [13]

If that's normal, then *this* community might anticipate those 50 additional cancers, *and then some*. [12]

Some will move quickly to discredit these cancer estimates. But to be of any service here, they will have to commit to some work.

They will have to convincingly disprove the findings of these two institutions.

The National Academy of Science has been an independent scientific advisor to government for 150 years. One would think that they could defend their data. **14**

To its credit, Hamilton's Public Health Services seems to sense that fluorosilicic acid has issues.

It reports on the City website that Hamilton's fluoride is *not* used until it's *made* pure. **15, 16**

That is extraordinary .. considering that:

- NSF doesn't require the removal of contaminants. **17**
- The chemical plants that make the chemical *won't* remove contaminants unless the purchaser tells them *how* **18**

I have never heard anyone in Hamilton's water utility speak of this fluorosilicic acid purification.

If a process exists, the rest of the water industry needs to know about it.

Thank you for your time and attention this afternoon.

References

1. Petition: No. 221B, Office of the Auditor General of Canada, Petitioner: Carole Clinch
Health Canada response to Q7, Q8, Q9, Q10, Q13, Q19:
Health Canada does not conduct research on the chemistry of fluoride species.

2. Congressional investigation 1999 and 2000 by a subcommittee of the House Committee on Science:

* EPA confirmed that the two compounds used almost exclusively in the U.S. for fluoridation have never, ever been studied for their effect on health or behaviour.

* NSF International, the private organization certifying fluoridation chemicals, confirmed that it is *doing so in violation of its own standard requiring manufacturers to submit any available* published and unpublished toxicological studies on both the fluoride compound and any contaminants contained in the product. NSF disclosed in the investigation that they have no such studies on file

3. NSF Fact Sheet on Fluoridating Chemicals, Table 1, pg 7

4. The Hamilton Spectator, September 27, 2011, Pg A3, 'Top doc tells city to get lead out' / Matthew Van Dongen

5. 'Lead in Drinking Water', WHO Guidelines for Drinking Water Quality, 03/04/2009, Pg 5, 'Effects on Humans'6. Coplan MJ, Patch SC, Masters RD, Bachman MS. 2007 Confirmation of and explanations for elevated blood lead and other disorders in children exposed to water disinfection and fluoridation chemicals. Neurotoxicology. Sep;28(5):1032-42.

6. "Masters and Coplan, besides showing that silicofluorides are probably increasing lead in children, have discovered a 1975 Ph.D. thesis in German showing that silicofluorides are far from completely dissociate in water, and these partially dissociated residues are potent acetyl cholinesterase inhibitors. **As a result of their work, EPA was forced to admit to Congressman**

Against the theory of silicofluoride dissociation:

Calvert that they have absolutely "no information on the effects of silicofluorides on health and behavior." Further, EPA officials now admit that they are not sure that hydrofluosilicic acid completely dissociates when added to water supplies and are planning on studies to determine what does happen. Silicofluorides have been added to drinking water supplies for 50 years without any idea of the possible consequences."

> Robert J. Carton, Ph.D. Chief, Environmental Protection Office of Regulatory Compliance & Quality U.S. Army Medical Research

Chem. Rev. **2002,** *102,* 2837-2854 'Fate of Fluorosilicate Drinking Water Additives', Edward Todd Urbansky.

The USEPA Request For Assistance (RFA) to further investigate the dissociation of silicofluorides, as earlier ordered by Congress.

The assumption that silicofluorides completely dissociate in water (Urbansky and Schock, 2000) has been questioned (Coplan and Masters, 2001). The possibility that intermediate species (e.g. SiF51-) exist under acidic conditions has been indicated (Urbansky, 2002; Morris, 2004; NRC, *2006,* p. 53).

Also possible is that SiF residues re-associate within the stomach (intra-gastric pH levels ~2.0; Ciavatta et al., 1988) and during food preparation, producing SiF-related species such as silicon tetrafluoride, a known toxin (Coplan, 2002).

7. USEPA Integrated Risk Information System (IRIS), Lead and Compounds (inorganic) (CASRN 7439-92-1), 11.A.: Evidence for Human Carcinogenicity .. Classification B: 'probable human carcinogen'

8. USEPA Integrated Risk Information System (IRIS), Arsenic (inorganic)(CASRN 7440-38-2) 11.A.: Evidence of Human Carcinogenicity
..Classification A: human carcinogen

9. Health Canada 2006 report 'Arsenic in Drinking Water' report it stated, "Because arsenic can cause cancer, every effort should be made to keep levels in drinking water as low as possible."

10. 240,000x DF / The Dilution Factor of HFSA when the target is 0.75mg/L of fluoride ion in drinking water / Peter Van Caulart, President Environmental Training Institute, Ridgeview, *Ontario / March 24, 2012*

11. April 24, 2000 / letter written by NSF's Stan Hazen, General Manager Drinking Water Additives Certification Program, to Mr. Juan Menedez, the State of Florida, Department of Public Health, Tallahassee, Florida

12. Natural Resources Defense Council. (2000). Arsenic and Old Laws: A Scientific and Public Health Analysis of Arsenic Occurrence in Drinking Water, Its Health Effects, and EPA's Outdated Arsenic Tap Water Standard. http://www.nrdc.org/water/drinking/arsenic/aolinx.asp

See next page for chart

Chart 1: Lifetime Risks of Dying of Cancer from Arsenic in Tap Water

*Based upon the National Academy of Sciences' 1999 Risk Estimates**

From the Natural Resource Defense Council's February 2000 Report "Arsenic & Old Laws"

Arsenic Level in Tap Water (in parts per billion, or ppb)	Approximate Total Cancer Risk (assuming 2 liters consumed/day)
0.5 ppb	1 in 10,000 (highest cancer risk EPA usually allows in tap water)
1 ppb	1 in 5,000

3 ppb	1 in 1,667
4 ppb	1 in 1,250
5 ppb	1 in 1,000
10 ppb	1 in 500
20 ppb	1 in 250
25 ppb	1 in 200
50 ppb	1 in 100
*See note 3 at http://www.nrdc.org/water/drinking/arsenic/chap3.aspfor details on how the NRDC calculated total cancer risk based on an extrapolation of NAS's risk estimates, which assumed a linear dose-response and no threshold.	

0.5 ppb: 1 in 10,000 in **Hamilton's** population of approx. 500,000 is 500,000 / 10,000 = 50
I ppb: 1 in 5000 in **Hamilton's** population of approx. 500,000 is 500,000 / 5000 = 100

13. Drinking Water Systems Regulation O. Reg. 170/03 Section 11 Hamilton Annual Report / January 2012 / page 5 of 7 .. 'Summary of inorganic parameters tested during this reporting period (Treated) / See Arsenic Result Value of <0.001 mg/l, equivalent to <1ppb

14. The **National Academy of Sciences** was established in 1863 to address the government's urgent need for an independent advisor on scientific matters. As science began to play an ever-increasing role in national priorities and public life, the National Academy of Sciences expanded to include the National Research Council in 1916, the National Academy of Engineering in 1964, and the Institute of Medicine in 1970.

NRDC is the nation's most effective environmental action group, combining the grassroots power of 1.3 million members and online activists with the courtroom clout and expertise of more than 350 lawyers, scientists and other professionals.

15. Copied, 12:23 pm March 27, 2012, from the City of Hamilton Official Website - Public Health Services 'Fluoride Question/Answers'

"Is the fluoride used in Hamilton contaminated with chemicals?
Fluoride goes through a purifying process before being used.
Independent testing shows that the fluoride used in City of Hamilton water exceeds all safety standards. Constant sampling shows that the water produced by the City of Hamilton's Woodward plant is among the purest drinking water in Ontario. The plant has received several awards for excellence and innovation."

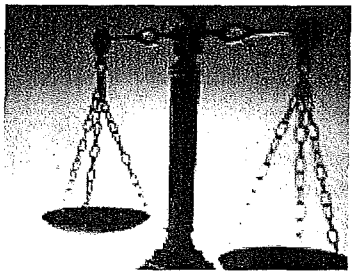
16. *Purify* Canadian Oxford Dictionary .."cleanse or make pure" / "clear of extraneous elements"

17. NSF Fact Sheet on Fluoridation Chemicals
http://www.nsf.org/business/water_distribution/pdf/NSF_Fact_Sheet.pdf.

18. AWWA Standard B703 Fluorosilicic Acid, Section 4.3 'Impurities' subsection 4.3.4 'Additional impurity limits may be specified by the purchaser to ensure the material supplied is suitable for water treatment. If additional impurity limits are specified, the purchaser must state the test methodology to be used to determine compliance with the additional limits."

end

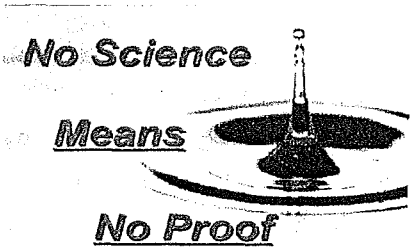
Legal Liabilities of Fluoridation: Who Bears Them?



Hamilton Board of Health
Monday April 16, 2012
G.W. Cooper, PEng, BEng, MBA
Public Policy Advisor
People for Safe Drinking Water

Key Provisions of Safe Drinking Water Act, 2002: S.19 - Standard of Care as of January 1, 2013

- Councillors need to:
  - exercise the level of care, *due diligence* and skill of a reasonably prudent person, and
  - act honestly, competently and with integrity to **ensure the protection and safety of the users.**



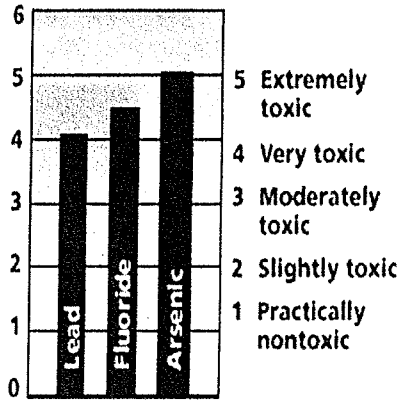
- SDWA Regulation 241-05 permits any resident to seek an MOE investigation on any contravention, enforcement, or appeal issue.

2

Key Provisions of Safe Drinking Water Act, 2002: S.20 - Prohibition of Toxic Substances

- S.20(1) prohibits a substance in drinking water that:
  - is or could be harmful to human health,
  - does or could contravene a prescribed standard, or
  - interferes with normal water treatment operations.
- S.20(3) also clearly states that dilution is not a defence.
- Yet governments permit fluoride levels (HFSA) in water up to 150 times higher than lead (10 ppb) and arsenic (0 ppb).

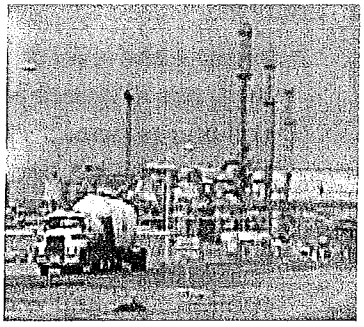
The Three Most Toxic Elements



3

Key Provisions of Safe Drinking Water Act, 2002: S.20 - Prohibition of Toxic Substances Cont'd

- On all 3 counts, S.20(1) prohibits HFSA is in our water, yet:
  - HSFA suppliers disclaim any liability for its purpose or use.
  - Example: ``However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use."
- Councillors ought not tolerate this contravention of S.20.



- Make the most recent HFSA hazmat delivery to the Woodward Treatment Plant the last ever.

4

Key Provisions of Safe Drinking Water Act, 2002: S.20 - Prohibition of Toxic Substances Cont'd

- HFSA has never been tested in Canada or the USA for safety against NSF 60, the prescribed standard.

  - Per January 2, 2007 NSF: "NSF International does not evaluate safety of chemicals added to water for the purpose of the treatment or mitigation of disease in humans ..."

  - This means there is no scientific proof that HFSA is safe for us to drink.

- Per the spirit of SDWA S.19 and the letter of S.20, Council's prudent action is to end fluoridating Hamilton's drinking water with HFSA.

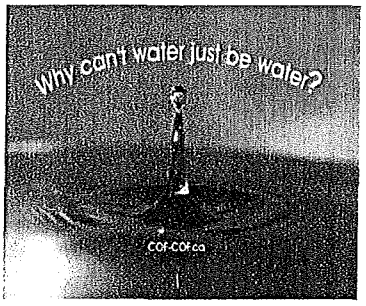
5

Conclusions

- Using HFSA contravenes S.20 of the Act as it does not meet NSF-60.

- Serious doubts exist about the objectivity and credibility of advice from Medical Officers of Health:
  - They must promote and defend fluoridation.
  - They are not research experts on fluoridation.

- Hence Council's decision must meet the S.19 due diligence test.



- We call, per the spirit of SDWA S.19 and the letter of S.20, on Council to be prudent by ending the fluoridation of Hamilton's drinking water with HFSA.

6

Risk, Science and Politics : Why Hamilton Should Continue To Fluoridate Its Water Supply

Simon J. Kiss, PhD and Andre Perrella, PhD
Wilfrid Laurier University
Laurier Institute For The Study Of Public Opinion And Policy (LISPOP)
http://www.lispop.ca

April 13, 2012

I am a political scientist at Wilfrid Laurier University and one of my major research interests is the politics of the environment and risk perception. Rather than seeing risks as objective phenomena, I see risks as political constructs. Science is very good at ascertaining relations between facts, but risks are much more than that. Inevitably, risks involve some kind of cost benefit calculation that *must* rely on individual values for its completion. That makes risks inherently political. With this perspective in mind, a colleague and I associated with the Laurier Institute For The Study Of Public Opinion And Policy, conducted a public opinion survey of voters in Waterloo about their views on fluoridation. Voters there overturned municipal fluoridation in 2010, which we thought surprising and curious. In the presentation to the Hamilton Board of Health, I will make the case that risks inherently involve value (political) judgements and that scientific evidence should be evaluated with this in mind.

Opposition to water fluoridation has a long history and has two major political roots. Most people consider opposition to water fluoridation to be a manifestation of radical libertarianism and anti-communism. The archetypal image here is the mad general in *Dr. Strangelove* who feels that water fluoridation is a manifestation of a communist plot. Indeed, libertarian opposition to medical treatment by the state . The second, source of opposition - and one which actually predates the anti-communist strand - is the opposition to modern food production and medicine. Thus, many of the original opponents to municipal fluoridation in the United States, Canada and Great Britain were actually people who were active in the organic

food and alternative medicine movements, including the anti-vaccination movements. This is why opposition to fluoridation does not map itself easily onto the traditional left-right divide of the political spectrum.

We found evidence of this in our survey. We found that some of the strongest predictors of anti-fluoridation attitudes was a mistrust of modern medicine and a fear of vaccinations.

Given that none of us are physical scientists, but acknowledging that Health Canada has studied and supported municipal fluoridation as both safe and beneficial, I would encourage the Board of Health to think about its own political values and the political values of the people who oppose it. Framing the debate in this way, the Board will start to see that the opponents of municipal fluoridation are not just motivated by any scientific evidence they can muster, but they are motivated by their own values of hostility to modern medicine (including vaccines) and to bureaucracies such as the public health department taking important actions to improve citizens' health.

Survey Notes

This public opinion survey was conducted in July 2011 by the Survey Research Center of the University of Waterloo. It as a random probability sample of 610 residents of the region of Waterloo (540 landlines and 70 cell phone residents).

Selected Findings From The Survey

Possible Dependent Variables

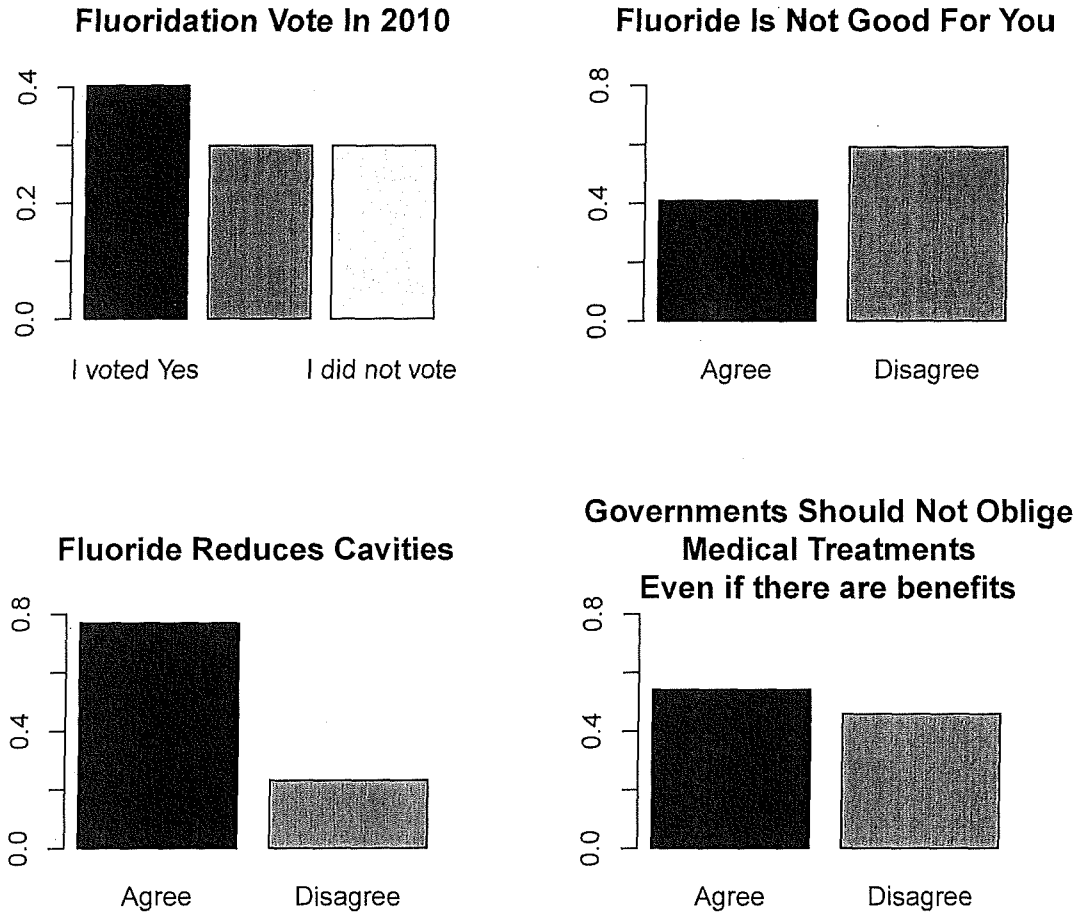


Figure 1: These graphs show the distribution of opinions from our public opinion survey of Waterloo residents (summer 2011) on some dependent variables. Notice that most people agree that fluoride reduces cavities, but there is a strong minority of people who agree that fluoride is not good for you. Moreover, on the question of whether the government should oblige mandatory medical treatments, people are split 50 -50.

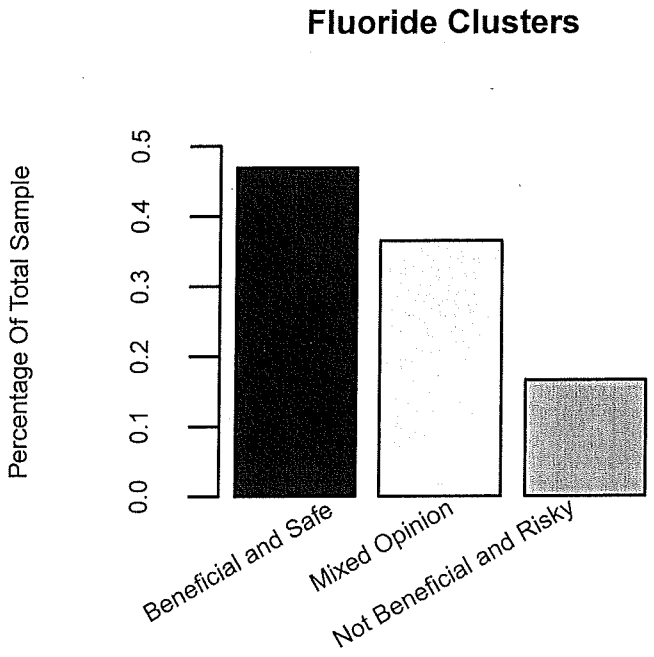


Figure 2: We combined people based on their combined responses to the questions about whether there were *benefits* to fluoridation and whether there were *risks* to fluoridation. Those who said it was beneficial and safe (by far, the plurality of people) were put in one cluster; those who thought there were no benefits and some risks were put in another cluster. The rest of the people mostly believed that there were benefits to fluoridation but maybe some risks and they were put in a third cluster

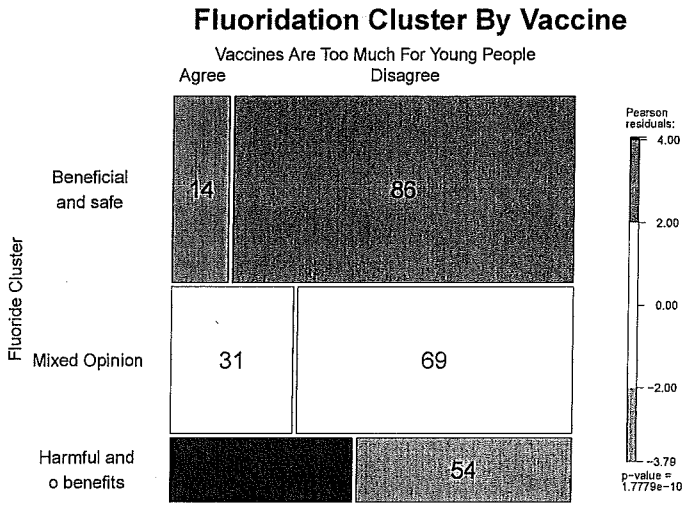


Figure 3: This is called a mosaic plot and it shows the distribution of views on fluoridation by views on vaccine skepticism. First, the graph is split vertically, according to how many people are in each fluoride cluster. Notice that the thickest, widest row corresponds to those who think that fluoridation is both beneficial and safe and that the rows get narrow moving down the graph. This corresponds to the distribution of opinions in Figure 2. Then, the cells are split vertically according to the distribution of opinions about vaccine skepticism. The numbers in each cell are *row* percentages; thus, 14% of people who believe that fluoridation is safe and beneficial believe also that vaccines are too much for young people to handle, while 86% of people who believe that fluoridation is safe and beneficial believe that vaccines are safe for children. By contrast, 46% of people who believe that fluoridation has no benefits and is risky also believe that vaccines are too much for young people to handle. Note also, as one moves downward toward fluoridation skepticism, vaccine skepticism also rises. If these two opinions were totally independent of each other, we would not expect to see this kind of pattern. The color codes simply represent over representation and underrepresentation compared to a strictly random distribution. Cells shaded pink have statistically significantly *less* respondents than we would expect by chance alone, while cells shaded blue have statistically significantly *more* respondents. One can tell, there is an overrepresentation of fluoridation skeptics who are also vaccine skeptics and there is an overrepresentation of fluoridation trusters who are also vaccine trusters. The authors also fit a multivariate model controlling for age, education and gender and found that the relationship with vaccine skepticism held strongly.