Request to Speak to a Committee of Council

7.1(a)(i)

If your request is for a specific committee meeting, this form must be received by NOON the day before the schedu committee meeting. Requests for Monday meetings must be received the Friday before the meeting. Requests for ... scheduled for the day after a statutory holiday must be received the last business day before the meeting.

Standing Committee Requested

Kindly indicate which Standing Committee: * Board of Health

Requestor Information

Name of Individual: *	Shane Coleman
Name of Organization:	Dilly`s
Do you or your organization represent a lobbyist (voluntary)	○ Yes ◉ No
Contact Number: *	2894899912
Email Address: *	thinkdilly@gmail.com
Mailing Address: *	35 York Blv
Reason(s) for delegation request: *	Concerns over Fluoride in Water Recent Vote by Calgary to remove Fluoride from Water New information on effects of Fluoride on Children.
Will you be submitting a formal presentation?*	◉ Yes ○ No
☐	Overhead projector required for the presentation
☑	Power Point required for the presentation

Requests to speak to Council are forwarded to the Standing Committee for consideration. Once considered by Committee, and approved, you will be notified of the date for your presentation.

This form is not for the purpose of presenting unsolicited proposals by Vendors to Committee. Such proposals are subject to a competitive process as required by the City's Purchasing Policy.

Personal information collected on this form is authorized under Section 5.10(2) of the City's Procedural By-law No. 10-053 for the purpose of contacting individuals and/or organizations requesting an opportunity to appear as a delegation before a Standing Committee and will be published with the Committee Agenda. The Voluntary Lobbyist Registry is a public document and will be available for viewing in the City Clerk's office. The Procedural By-law is a requirement of Section 238(2) of the Municipal Act. Questions about its collection can be directed to the Manager, Legislative Services / Deputy Clerk, City Hall, 71 Main St. W., Hamilton, ON L8P 4Y5 (905 546-2424 ext. 4304).

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
802-864-6309
http://www.communityhealthcenterburlington.org/about_us.htm

Le Leche League International
802-985-8228, or 802-863-7981
http://www.lelecheleague.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

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.

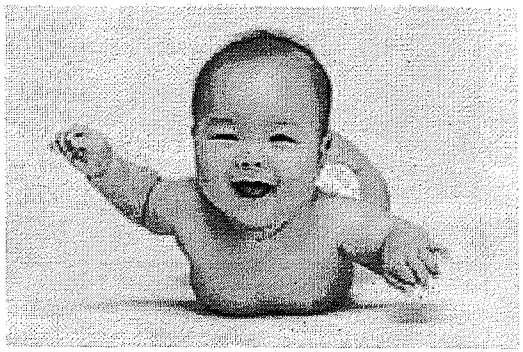
Communities add fluoride to water systems by adjusting the amount of natural fluoride found in the water, to a level that is best for the dental health of its residents.

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



Great Lakes United
Union St-Laurent Grands Lacs

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

Buffalo c/o Daemen College | 4380 Main Street | Amherst, New York | 14226
Toronto 120-215 Spadina Avenue | Toronto, Ontario | M5T 2C7
Montréal 3388 Adam Street | Montréal, Québec | H1W 1Y1

Buffalo
(T) 716-886-0142
(F) 716-204-9521

Montréal
(T) 514-396-3333
(F) 514-396-0297

glu@glu.org
www.glu.org

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 5-10 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 wordwide 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;

Therefore be it further resolved that Great Lakes United supports government policies, practices and regulations which do not permit drinking water to be used as a means of delivery for chemicals or drugs intended to treat humans – for example, the chemical called hydrofluorosilicic acid, used to deliver fluorides;

Therefore be it further resolved that Great Lakes United supports government policies, practices and regulations requiring fluoride polluting industries to dispose of this hazardous waste in a safe, sustainable manner which does not harm our ecosystem;

Therefore be it further resolved that Great Lakes United communicates accurate information regarding the safety and efficacy of these artificial fluoridation chemicals to municipal associations (such as the Federation of Canadian Municipalities), the Great Lakes-St. Lawrence Cities Initiative, First Nations and Tribal Governments who are attempting to make informed decisions on this issue;

Therefore be it further resolved that Great Lakes United makes their position known to provincial, state and federal governments.

I hereby certify that this is a true copy of a resolution adopted at the twenty-seventh annual meeting of Great Lakes United on May 20, 2009.

Julie L. O'Leary

Julie O'Leary
President

The Journal of the American Dental Association

The Journal of the American Dental Association

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Evidence-Based Clinical Recommendations Regarding Fluoride Intake From Reconstituted Infant Formula and Enamel Fluorosis

A Report of the American Dental Association Council on Scientific Affairs

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4. **Rebecca King, DDS, MPH,**
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9. **Gary M. Whitford, PhD, DMD,**
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11. **Krishna Aravamudhan, BDS, MS,**
12. **Julie Frantsve-Hawley, RDH, PhD,**
13. **Daniel M. Meyer, DDS and**
14. **for the American Dental Association Council on Scientific Affairs Expert Panel on Fluoride Intake From Infant Formula and Fluorosis**

Next Section

Abstract

Background. This article presents evidence-based clinical recommendations regarding the intake of fluoride from reconstituted infant formula and its potential association with enamel fluorosis. The recommendations were developed by an expert panel convened by the American Dental Association (ADA) Council on Scientific Affairs (CSA). The panel addressed the following question: Is consumption of infant formula reconstituted with water that contains various concentrations of fluoride by infants from birth to age 12 months associated with an increased risk of developing enamel fluorosis in the permanent dentition?

Types of Studies Reviewed. A panel of experts convened by the ADA CSA, in collaboration with staff of the ADA Center for Evidence-based Dentistry (CEBD), conducted a MEDLINE search to identify systematic reviews and clinical studies published since the systematic reviews were conducted that addressed the review question.

Results. CEBD staff identified one systematic review and two clinical studies. The panel reviewed this evidence to develop recommendations.

Clinical Implications. The panel suggested that when dentists advise parents and caregivers of infants who consume powdered or liquid concentrate infant formula as the main source of nutrition, they can suggest the continued use of powdered or liquid concentrate infant formulas reconstituted with optimally fluoridated drinking water while being cognizant of the potential risks of enamel fluorosis development. These recommendations are presented as a resource to be considered in the clinical decision-making process. As part of the evidence-based approach to care, these clinical recommendations should be integrated with the practitioner's professional judgment and the patient's needs and preferences.

- **Fluoride**
- **infant formula**
- **fluorosis**
- **evidence-based dentistry**
- **clinical recommendations**

- **ADA: American Dental Association**
- **CDC: Centers for Disease Control and Prevention**
- **CEBD: Center for Evidence-Based Dentistry (of the American Dental Association)**
- **CSA: Council on Scientific Affairs (of the American Dental Association)**
- **EPA: Environmental Protection Agency**
- **FDA: Food and Drug Administration**
- **HP2010: Healthy People 2010**

- **IFPS II: Infant Feeding Practices II**
- **IFS: Iowa Fluoride Study**
- **MeSH: Medical Subject Headings**

Many national agencies advocate breastfeeding because of its benefits to both mother and infant.[1–3] Healthy People 2010 (HP2010) targets for the percentage of the population initiating breastfeeding, breastfeeding infants to the age of 6 months and breastfeeding infants to the age of 12 months are 75 percent, 50 percent and 25 percent, respectively.[4] Since 1990, national estimates of breastfeeding initiation have shown a consistent increase, and the overall national prevalence is close to reaching the HP2010 target of 75 percent.[5] The Centers for Disease Control and Prevention (CDC), Atlanta, reported that 74 percent of mothers of children born in 2005 initiated breast-feeding in the postpartum period, with 43 percent and 22 percent of their infants continuing to be breastfed for six and 12 months, respectively.[6] Only 12 percent of these mothers exclusively breastfed their infants through the age of 6 months.[5] Thus, infant formula remains a major source of nutrition for many infants in the United States.[5,7] By the time infants have reached 3 months of age, the percentage who have received any formula (61 percent) is about equal to the percentage who have received any breast milk.[7] Exclusive use of formula is highest among infants aged between 2 and 3 months (approximately 25 percent) and then decreases to less than 5 percent by age 6 months (Figure⇓).[7] Whereas breast-feeding increased, the total volume of infant formula sold in the United States (measured by reconstituted ounces) decreased by 10 percent from 1994 to 2000.[8]

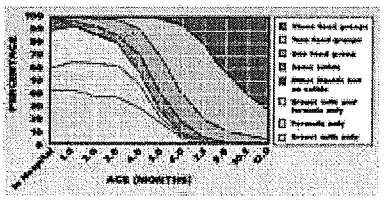

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Figure.

Types of foods consumed by infants, according to age. Reprinted with permission of the American Academy of Pediatrics from Grummer-Strawn and colleagues.[7]

Among the various types of formula, across the same period, the percentage of powdered formula sold increased notably (from 43 percent to 62 percent), and concurrently the sales of liquid concentrate formula decreased (from 42 percent to 27 percent).[8] Consistent with these changes in type of formula sold were findings from the national Infant Feeding Practices Survey II (IFPS II) that was conducted from 2005 to 2007 by the U.S. Food and Drug Administration

(FDA) and CDC, in collaboration with other federal agencies. In the IFPS II, about 90 percent of mothers who participated in the survey and who fed their infants with formula reported using powder from a can throughout the infant's first year.[9] Seven to 10 percent of these participating mothers indicated that they used liquid concentrate and 10 to 14 percent indicated that they used ready-to-feed formula.[9] (Percentages of type of formula used do not add up to 100 percent because mothers could choose all that applied.)

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INFANT FORMULAS TODAY

In the United States, other than some specialty products, most commercial infant formulas are either milk-based or soy-based products. Ready-to-feed formulas do not need to be reconstituted, but the powdered or liquid concentrate formulas require reconstitution with drinking water. Table 1⇓ presents the mean fluoride concentration in the different types of formulas. Because powdered and liquid concentrates contain low concentrations of fluoride, the final concentration of fluoride in these formulas depends largely on the fluoride content of the water used to reconstitute them.[10] Compared with the reconstituted formulas, ready-to-feed formulas contain the lower fluoride concentration.[10]

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TABLE 1

Mean (SD*) fluoride concentration (ppm†) in a range of infant formulas in the United States in 2008.‡

One can reconstitute formula with either tap or bottled drinking water. About 70 to 75 percent of the mothers who participated in the 2005–2007 IFPS II and who fed their infants with formula reported using tap water to reconstitute the formula.[11] The CDC reported that in 2008, 72.4 percent of the U.S. population who used public water supplies received optimally fluoridated water.[12] The optimal fluoride concentration in drinking water, as established by the U.S. Public Health Service, is 0.7 to 1.2 parts per million, a range that research has shown to be beneficial in reducing caries.[13] In some areas, naturally occurring fluoride levels may be above or below these concentrations. Box 1⇓ (page 82) presents information on how to learn more about the fluoride content of drinking water.[14]

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TABLE 2

Shekelle system for grading evidence.*

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BOX 1

Learning more about fluoride content in drinking water.

Most bottled waters contain a less-than-optimal concentration of fluoride, and the fluoride content varies among brands.[15–18] Bottled-water products that are marketed as "purified," "distilled," "deionized," "demineralized" or "produced through reverse osmosis" typically have concentrations of fluoride much lower than those of products marketed without these claims.[19] There is no federal requirement to display the fluoride content on the bottle's label, unless fluoride is added specifically.[19]

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FLUORIDE INTAKE AND ENAMEL FLUOROSIS

Ingestion of fluoride during critical periods of tooth development may result in a range of visually detectable changes in enamel opacity that are termed "enamel fluorosis," a type of hypomineralization of the enamel.[20] To cause fluorosis, biological plausibility suggests, fluoride must be present at the time of enamel mineralization in sufficient quantity for a sufficient duration and in a susceptible child.[21] The severity and distribution of fluorosis depend on the amount and duration of fluoride intake; the balance of ingested fluoride (total intake minus total excretion), which determines the fluoride concentrations throughout the body (including the fluids around and within the developing teeth); the stage of tooth development at exposure; and the child's susceptibility to the condition.[22] The excretion of fluoride occurs almost exclusively in the urine.[23] Fluoride excretion is strongly and directly related to urinary pH,[23] which, in turn, is determined by the composition of the diet.[23–25] Sources of ingested fluoride include drinking water; foods and beverages, including infant formula; fluoride toothpaste; and prescription fluoride supplements.[26,27]

During normal enamel maturation, the increased mineralization in the developing tooth is accompanied by the loss of matrix proteins that are secreted early in development.[28] Sufficiently high levels of fluoride can disrupt this process and increase enamel porosity.[29] When the clinician dries the teeth and inspects them carefully under direct lighting, he or she can see the milder forms of enamel fluorosis as white opacities that appear as minor striations or patches of paper-white enamel. More pronounced forms of fluorosis may manifest as enamel that is stained, pitted, lost or a combination of these because of fracture or attrition.[22,30]

Permanent teeth, except for later-developing third molars, are susceptible to the development of enamel fluorosis in children younger than 9 years, after which time pre-eruptive enamel

maturation is complete.[26,31–35] Generally, the greater the amount of fluoride intake during tooth development, the greater the prevalence of enamel fluorosis.[33]

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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. We should note that the panel did not review all available evidence on fluoride's pre-eruptive caries-preventive effect. This report does not address any other health outcomes arising from exposure to infant formula.

In this report, we present a critical evaluation and summary of the relevant scientific evidence that is intended to assist the clinician in the decision-making process. This report does not represent a standard of care. The clinical recommendations presented here should be integrated with the practitioner's professional judgment and the individual patient's needs and preferences. This report replaces the Interim Guidance on Fluoride Intake for Infants and Young Children published by the ADA in 2006.[40]

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METHODS

The Council selected panelists on the basis of their expertise in the relevant subject matter. At workshops held at ADA Headquarters Nov. 10–12, 2008, and July 20–22, 2009, and in subsequent conference calls and e-mail communications, the panel evaluated the published evidence and developed evidence-based clinical recommendations for the use of fluoridated water in reconstituting infant formula.

Conflict-of-interest disclosures.

The panel comprised 12 people who represented a broad range of expertise. Each panelist completed a standard conflict-of-interest questionnaire.

Literature search.

The panel established the following inclusion and exclusion criteria to screen for relevant articles.

Inclusion criteria.

Staff members of the ADA Center for Evidence-based Dentistry (CEBD) included studies if they

- – were published in English;
- – were conducted in humans;
- – involved the evaluation of the use of infant formula and dental fluorosis;
- – involved the examination of children for fluorosis and included information on fluorosis prevalence as an outcome.

Exclusion criteria.

CEBD staff members excluded studies if they

- – involved evaluation of animals;
- – provided information only on other fluoride exposures (for example, toothpastes and nonformula dietary sources);
- – focused on primary teeth.

CEBD staff members searched MEDLINE for articles published until Sept. 9, 2008, to identify systematic reviews and current clinical studies that addressed the following clinical question: Is consumption of infant formula reconstituted with water that contains various concentrations of fluoride by infants from birth to 12 months associated with an increased risk of developing enamel fluorosis in the permanent dentition?

Systematic reviews.

The CEBD staff members limited the search to English-language articles and systematic review or meta-analysis articles and used the following search terms: "fluorosis" OR "Fluorosis, Dental" (Medical Subject Headings [MeSH] Terms) OR "mottled teeth" AND "bottlefeed*" OR "bottle feed*" OR "bottle-feed*" OR "bottlefed" OR "bottle fed" OR "bottle-fed" OR "infant formula*" OR "formula*" AND "feeding" OR "formula fed" OR "reconstituted milk" OR "infant food" OR "bottled water" OR "breastfeed*" OR "breast feed*" OR "breast-feed*" OR "breastfed" OR "breast fed" OR "nutrition physiology" OR "diet OR "feeding behavior" OR "food analysis" OR "epidemiologic factors" OR "time factors" NOT "animals" (MeSH Terms) NOT "humans" (MeSH Terms).

This search yielded 75 articles. Two CEBD staff members (S.S. and K.A.) independently reviewed titles and abstracts and identified 20 articles for full-text review. The same reviewers read the 20 articles and excluded all of them. (For information about excluded articles along with reasons for exclusion, see Appendix 1 of the supplemental data to the online version of this article at "http://jada.ada.org".)

The panel considered the prepublication version of a systematic review previously commissioned by the CSA. This article subsequently was published in The Journal of the American Dental

Association.[41] On June 16, 2010, CEBD staff replicated the original search for literature published from Sept. 10, 2008, through that date but did not identify any additional reviews.

Clinical studies.

CEBD staff members conducted a second search to identify clinical studies published after the last search date within the systematic review.[41] They searched for clinical studies published between Sept. 1, 2007, and Sept. 8, 2008. Their initial search yielded 16 articles. Two independent reviewers (S.S. and K.A.) reviewed titles and abstracts for relevance to the clinical question. They identified five articles for full-text review, of which they selected for inclusion one clinical study by Spencer and Do.[42] (For information about excluded articles, see Appendix 1 of the supplemental data to the online version of this article at "http://jada.ada.org".) After reviewing this article, the panel asked the primary author of the systematic review (P.P.H.), who also was a member of the expert panel, to incorporate this study into the analyses performed for the systematic review and generate an updated summary estimate. (For information on the update to the systematic review, see Appendix 2 of the supplemental data to the online version of this article at "http://jada.ada.org".). During the panel meeting, one panel member (S.L.) also presented additional data from the Iowa Fluoride Study (IFS) for the panel's consideration. An article containing these additional data from the IFS recently was published in JADA.[27] CEBD staff members updated the search on June 16, 2010, searching for relevant articles published after Sept. 9, 2008, and found 40 studies but selected none for inclusion.

Critical appraisal.

The panel performed a qualitative assessment of the strengths and limitations of each study to determine the quality of the evidence. (For information about the individual studies, see Appendix 2 of the supplemental data to the online version of this article at "http://jada.ada.org".)

Grading the evidence and classifying the strength of the clinical recommendations.

On the basis of the included studies, the panel developed evidence statements and graded them according to a system developed by Shekelle and colleagues[43] (Table 2⇑). The panel developed clinical recommendations on the basis of its interpretation of this evidence. The panelists classified clinical recommendations according to the strength of the evidence that forms the basis for the recommendation, again using a system modified from that of Shekelle and colleagues.[43] The classification of the recommendation directly reflects the level of scientific evidence that supports the recommendation.

Process for developing clinical recommendations.

When the panel members were unable to reach a consensus in interpreting evidence into clinically relevant recommendations, they used a majority vote to make final determinations.

Review process.

The panel submitted its clinical recommendations for comment to both internal and external scientific experts and organizations. (For a listing of external reviewers, see Appendix 3 of the supplemental data to the online version of this article at "http://jada.ada.org".) After reviewing all submitted remarks, the panel revised its recommendations where appropriate. The CSA approved the final clinical recommendations.

Role of the funding source.

The CSA commissioned the panel's work, which was funded by the ADA.

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RESULTS

One systematic review,[41] which was commissioned by the ADA, addressed the association between infant formula consumption and fluorosis. One cross-sectional study provided data in addition to those from the systematic review.[42] One prospective study[27] addressed the association between fluorosis and fluoride intake from formula.

The authors of the systematic review concluded that in infants from birth to age 24 months, formula consumption can be associated with an increased risk of developing at least some detectable level of enamel fluorosis (odds ratio [OR] = 1.81; 95 percent confidence interval [CI], 1.44–2.26).[41] Most of the articles included in the review provided minimal information about the extent of the participant's exposure to infant formula, the type of infant formula the participant consumed (powdered or liquid concentrate or ready to feed), the fluoride concentration of the formula and, if the formula was reconstituted, the fluoride content of the water. Hence, the authors were unable to determine whether the increased risk was caused by fluoride intake from the infant formula product, fluoridated drinking water or other possible sources of fluoride such as toothpastes or fluoride supplements. The authors of the review updated their analyses with the results from the cross-sectional study.[42] The updated estimate of OR was 1.74 (95 percent CI, 1.40–2.15). (For information about the updated analyses, see Appendix 2 of the supplementaldata to the online version of this article at "http://jada.ada.org".)

The authors of the IFS determined the relationship between fluoride intake from reconstituted infant formula by infants between the ages of 3 and 9 months and enamel fluorosis of the permanent maxillary incisors.[27] The investigators used data from questionnaires completed by parents of children aged from 6 weeks to 36 months to estimate the fluoride intake from reconstituted powdered formula among infants aged 3 to 9 months, as well as the fluoride intake from other beverages (primarily reconstituted fruit juices) among infants aged 3 to 9 months and from dentifrices in children aged 16 to 36 months.[27] They used the Fluorosis Risk Index[44] to evaluate the fluorosis of the permanent maxillary incisors in children who were about 9 years of age. (For information about this study, see Appendix 2 of the supplemental data to the online version of this article at "http://jada.ada.org".)

The panel reached the following conclusions on the basis of available evidence. Clinicians should consider these conclusions in their totality and not as exclusive of one another.

- – Consumption of infant formula may be associated with an increased risk of developing enamel fluorosis in the permanent dentition[41] (level III).
- – The estimated risk of enamel fluorosis related to fluoride intake from reconstituted infant formula is associated with the fluoride concentration in the drinking water[27] (level III).
- – Factors such as multiple and often concurrent exposures to fluoride during the period of tooth development in children make it difficult to isolate an individual child's risk of fluorosis development associated with fluoride intake from one specific exposure, such as the use of reconstituted infant formula during the first year of life[27,41] (level III).

Box 2⇓ presents the recommendations developed by the expert panel regarding fluoride intake from infant formula (which take into account the infant nutrition guidelines published by the American Academy of Pediatrics[45]). Box 3⇓ presents the panel's recommendations for research, which are based in part on recommendations from CDC.[21]

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BOX 2

Recommendations of the expert panel regarding fluoride intake from infant formula.

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BOX 3

Recommendations for research.

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DISCUSSION

On the basis of the available evidence, a majority of the panel members concluded that when advising parents and caregivers of infants from birth to age 12 months who consume reconstituted infant formula as the main source of nutrition, practitioners can suggest the continued use of powdered or liquid concentrate infant formulas reconstituted with optimally fluoridated drinking water while being cognizant of the potential risk of enamel fluorosis development. For parents and caregivers who are concerned about the potential for increasing children's risk of developing enamel fluorosis, practitioners can suggest ready-to-feed formula or powdered or liquid concentrate formula reconstituted with water that either is fluoride free or contains only low concentrations of fluoride. Examples of such water are water that is labeled

"purified," "demineralized," "deionized," "distilled" or "produced through reverse-osmosis."[19] In making its recommendations based on the available evidence, the panel considered the following factors:

- – amount, duration and timing of fluoride intake as they affect the prevalence of fluorosis in early-erupting permanent teeth;
- – the prevalence and severity of fluorosis in children who consumed infant formula reconstituted with fluoridated community drinking water compared with the prevalence and severity in those who did not consume formula;
- – the effects of mild enamel fluorosis on oral health–related quality of life.

In general, the greater the amount of fluoride intake during tooth development in any person, the greater the prevalence of fluorosis development.[33] Bardsen,[32] who conducted a meta-analysis of the literature, suggested that the duration of the fluoride exposure during the course of amelogenesis (enamel formation), rather than just during any specific or critical risk period, determines the development of fluorosis in the permanent maxillary incisors. Fluoride intake from all sources combined from birth to age 3 or 4 years can place a child at risk of developing fluorosis in early-erupting teeth.[33–35] Fluorosis in late-erupting teeth (other than the third molars) can occur as a result of systemic exposure to fluoride until about age 8 years.[26,32]

Infants who consume formula do so mainly during the first six months of life.[7] During their first year of life, infants are exposed to fluoride primarily via infant formula reconstituted with fluoridated water and other beverages that contain added fluoridated water.[27] Before the 1994 change in the fluoride supplement schedule,[46] fluoride supplements also were prescribed for infants younger than 6 months living in communities with a water fluoride concentration of less than 0.3 ppm.[47] These exposures, along with other exposures that occur after the first year (such as use of fluoridated dentifrice; use of supplements; consumption of optimally fluoridated drinking water by itself; consumption of other beverages with water added; and consumption of selected foods, including those with substantial amounts of added water), contribute to fluorosis of the developing dentition.

Multiple and often concurrent exposures during the period of tooth development make it difficult to isolate the risk associated with fluoride intake from one specific exposure, such as the use of reconstituted infant formula during the first year of life. Children participating in the IFS ingested fluoride from many sources, including formula reconstituted with fluoridated water, other beverages with added water (mainly reconstituted juices), dietary supplements and dentifrices.[27] Overall, there was a statistically significant association in the IFS between substantial fluoride intake from reconstituted powdered infant formula (upper quartile of fluoride intake among the participating children) and increased fluorosis prevalence (relative risk = 1.40; 95 percent CI, 1.06–1.84, $P < .02$) of the permanent maxillary incisors.

Using logistic regression to adjust for the effects of fluoride from other sources, investigators in the IFS examined the relationship between fluoride intake from reconstituted powdered infant formula, specifically, and enamel fluorosis of the permanent maxillary incisors in the children enrolled in the IFS. The authors found that an increase of 0.1 milligram of fluoride per day in average daily fluoride intake from reconstituted powdered formula in infants aged 3 to 9 months

was associated with an increase in the risk of developing enamel fluorosis in the permanent maxillary incisors (OR = 1.10; 95 percent CI, 1.03–1.17, $P < .05$).[27] For example, according to the adjusted statistical model, children in the IFS who had median levels of fluoride intake from beverages between ages 3 and 9 months (primarily reconstituted fruit juices) and dentifrice between ages 16 and 36 months, but did not have any fluoride intake from reconstituted powdered formula between ages 3 and 9 months (that is, those who were breastfed or received ready-to-feed formula), would have a risk of 30.7 percent of developing enamel fluorosis in two or more maxillary incisors. If children consumed an average of 8 ounces of powdered formula reconstituted with water containing 1 ppm fluoride per day from age 3 months through age 9 months, in addition to the median fluoride intake from other sources, they would have a projected 35.5 percent risk of developing enamel fluorosis. If these children consumed 12 oz of reconstituted powdered infant formula daily, this risk would be 38.0 percent, whereas if they consumed 16 oz daily, the projected risk would be 40.6 percent.[27]

In terms of prevalence, of the 600 children examined in the IFS, 178 (29.7 percent) had fluorosis on two or more maxillary incisors, 382 (63.7 percent) had no maxillary incisor fluorosis and 40 (6.7 percent) had only one affected incisor and were excluded from the analysis. The majority of fluorosis detected was mild (that is, white striations; n = 173, 97 percent), with only five participants having more pronounced fluorosis (that is, staining or pitting of the enamel).[27] According to a 2010 review of the few studies in which researchers examined oral health–related quality of life, none of those studies' results showed mild enamel fluorosis to have negative effects. Investigators in studies of the public's perceptions of enamel fluorosis have found that people generally express concern only regarding more pronounced forms of fluorosis,[48] although perceptions can change across time and can vary among different cultures.[49]

Previous SectionNext Section

CONCLUSION

Practitioners should be aware that children are exposed to multiple sources of fluoride during the tooth development period. Reducing fluoride intake from reconstituted infant formula alone will not eliminate the risk of fluorosis development. It also is important that clinicians provide advice to parents regarding the proper use of fluoridated toothpastes[21] along with the informed prescription of fluoride supplements.[50] The panel acknowledges and encourages clinicians to follow the American Academy of Pediatrics' guidelines for infant nutrition, which advocate exclusive breastfeeding to age 6 months and continued through at least age 12 months unless specifically contraindicated.[45] Human breast milk has been shown to have consistently low levels (0.005–0.01 ppm) of fluoride.[51–53]

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Sodium Fluorosilicate

Sodium Fluorosilicate

Material Safety Data Sheet

Chemical: Sodium Fluorosilicate

NFPA: H=3 F=0 I= 0 S=None
HMIS: H=3 F=0 R=0 PPE= Supplied by user; dependent on conditions

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

Not valid three years after effective date or after issuance of superseding MSDS, whichever is earlier. French or Spanish translations of this MSDS may be available. Check www.solvaychemicals.us or call Solvay Fluorides, LLC to verify the latest version or translation availability.

Material Safety Data Sheets contain country specific regulatory information; therefore, the MSDS's provided are for use only by customers of Solvay Fluorides, LLC in North America. If you are located in a country other than the United States, please contact the Solvay Group company in your country for MSDS information applicable to your location.

1. Company and Product Identification

1.1 **Product Name:** Sodium Fluorosilicate
Chemical Name: Sodium Silicofluoride
Synonyms: Sodium Fluosilicate, Sodium Fluorosilicate, Sodium Silica Fluoride, Disodium Hexafluoro- Silicate(2-)
Chemical Formula: Na_2SiF_6
Molecular Weight: 188.1
CAS Number: 16893-85-9
EINECS Number: 240-934-8
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**
General: 1-877-765-8292 (Solvay Fluorides, LLC)
Emergencies (USA): 1-800-424-9300 (CHEMTREC®)
Transportation Emergencies (INTERNATIONAL/MARITIME): 1-703-527-3887 (CHEMTREC®)
Transportation Emergencies (CANADA): 1-613-996-6666 (CANUTEC)
Transportation Emergencies (MEXICO-SETIQ): 91-800-00-214-00 (MEX. REPUBLIC)
-0-11-525-559-1588 (elsewhere)

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SOLVAY

Sodium Fluorosilicate

Material Safety Data Sheet

2. Composition/Information on Ingredients

INGREDIENTS	FORMULA	WT. PERCENT	CAS #
Sodium Silicofluoride	Na_2SiF_6	≥ 98.0%	16893-85-9
Water	H_2O	≤ 0.5%	7732-18-5
Insoluble Matter		≤ 0.5%	

3. Hazards Identification

Emergency Overview:

- Hazardous product for the human health and the aquatic environment.
- Presents hazards from its ionizing fluorine.
- In case of decomposition, releases hydrogen fluoride.

3.1 Route of Entry: Inhalation: Yes Skin: Yes Ingestion: Yes

3.2 Potential Effects of exposure:

- Irritating to mucous membranes, eyes and skin.
- Risk of cardiac and nervous disorders.
- Chronic exposure to the product can cause bone fluorosis.

Inhalation:

- Nose and throat irritation.
- Spasmodic cough and difficulty in breathing.
- At high concentrations, risk of hypocalcemia (possible life-threatening lowering of serum calcium) with nervous problems (tetany) and cardiac arrhythmia (heart irregularity).
- In case of repeated or prolonged exposure; risk of sore throat, nose bleeds, chronic bronchitis.

Eyes: Severe eye irritation, watering, and redness.

Skin contact:

- Irritation, redness and swelling of the skin.
- In case of prolonged contact: risk of burns.

Ingestion:

- Severe irritations, burns, perforation of the gastrointestinal tract accompanied by shock.
- Nausea, vomiting (bloody), abdominal cramps and diarrhea (bloody).
- Risk of hypocalcemia (possible life-threatening lowering of serum calcium) with nervous problems (tetany) and cardiac rhythm disorders.
- Risk of convulsions, loss of consciousness, deep coma and cardiopulmonary arrest.
- Risk of general symptoms having a severe prognosis.

Carcinogenicity: See section 11.3

4. First-Aid Measures

4.1 General Recommendations: Strict hygiene during and at the end of working shifts

Inhalation:
- Remove the subject from dusty environment.
- Oxygen or cardiopulmonary resuscitation if necessary.
- Consult with a physician in case of respiratory symptoms

Eyes:
- Consult with an ophthalmologist immediately in all cases.
- Take to hospital immediately.
- Flush eyes with running water for 15 minutes, while keeping the eyelids wide open.

Skin:
- Remove contaminated shoes, socks and clothing; while washing the affected skin with soap and water for 15 minutes. Double bag all contaminated clothing for disposal.
- Cover with an anti-bacterial cream.
- Provide clean clothing.
- Consult with a physician in cases of persistent pain or redness.

Ingestion:
- Contact a physician for immediately in all cases.
- Take to hospital.

If the subject is completely conscious:
- Rinse mouth with fresh water.
- Give to drink 3-4 glasses of milk or a 1% aqueous calcium gluconate solution.
- If the subject presents nervous, respiratory or cardiovascular disorders: administer oxygen.

If the subject is unconscious:
- NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSIOUS PERSON
- Classical resuscitation measures.

4.2 Medical Treatment/Notes to Physician: Exposed person should be observed for 48-72 hours for delayed onset of edema.

Inhalation: Pre-existing respiratory diseases may be aggravated including asthma and emphysema.

5. Fire-Fighting Measures

5.1 Flash point: Non flammable

5.2 Auto-ignition Temperature: Not applicable

5.3 Flammability Limits: Not applicable

5.4 Unusual Fire and Explosion Hazards: Formation of dangerous gas/vapors in case of decomposition (see section 10)

5.5 Extinguishing Methods

Common:

- In case of fire in close proximity, all means of extinguishing are acceptable.
- Use extinguishing media appropriate for surrounding fire.

Inappropriate extinguishing means: No restriction.

5.6 Fire Fighting Procedures:

Specific hazards: Non-combustible

Protective measures in case of intervention:

- Wear self contained breathing apparatus when in close proximity or in confined spaces.
- When intervening in close proximity wear acid resistant over-suit.
- After intervention, proceed to clean the equipment (take a shower, remove clothing carefully, clean and check).

Other precautions: Control the use of water due to environmental risk (see section 6).

6. Accidental Release Measures

6.1 Precautions:

- Follow the protective measures given in section 8.
- Avoid dispersing the dust into a cloud.

6.2 Cleanup methods:

- Collect the product with suitable means avoiding dust formation.
- Place everything into a closed, labeled container compatible with the product.
- For disposal methods, refer to section 13.

6.3 Precautions for protection of the environment:

- Immediately notify the appropriate authorities in case of significant discharge.
- Do not discharge into the environment (sewers, rivers, soils, ...).

7. Handling and Storage

7.1 Handling:

- Use only equipment and materials which are compatible with the product.
- Keep away from heat sources.
- Keep away from reactive products (see section 10)

7.2 Storage:

- Keep in original packaging, and tightly closed.
- Keep away from reactive products (see section 10).

7.3 Specific Uses: See Section 1.2

7.4 Other precautions:

- Warn people about the hazards of the Sodium Silicofluoride.
- Avoid dust and formation of dust clouds.
- Follow the protective measures given in section 8.

7.5 Packaging: Paper lined with PE.

Sodium Fluorosilicate

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8. Exposure Controls/Personal Protection

8.1 Exposure Limit Values: Sodium Fluorosilicate

Authorized limit Values	TLV® ACGIH®-USA (2002)	OSHA PEL	NIOSH REL (1994)
Fluorides	2.5 mg/m³ (as F)	2.5 mg/m³ (as F)	None

ACGIH® and TLV® are registered trademarks of the American Conference of Governmental Industrial Hygienists.

8.2 Exposure Controls:

- Follow the protective measures given in section 7.
- Maintain employee exposures to levels below the applicable exposure limits.

8.2.1 Occupational Exposure Controls:

8.2.1.1 Ventilation: Provide local ventilation suitable for the dust risk.

8.2.1.2 Respiratory protection:

- Self/contained breathing apparatus in medium confinement/insufficient oxygen/in case of large uncontrolled emissions/in all circumstances when the mask and cartridge do not give adequate protection.
- Use only respiratory protection that conforms to international/national standards.
- Use only NIOSH approved respirators.
- Comply with OSHA respiratory protection requirements.

8.2.1.3 Hand protection:

- Protective gloves - chemical resistant:
- Recommended materials: PVC, neoprene, and rubber.

8.2.1.4 Eye protection: Dust proof goggles.

8.2.1.5 Skin protection:

- Overalls.
- Apron/boots of PVC, neoprene, rubber in case of dusts.

8.3 Other precautions:

- Do not smoke, eat and drink in the working area.
- Take off contaminated clothing immediately after work.
- Shower and eye wash stations.
- Consult the industrial hygienist or the safety manager for the selection of personal protective equipment suitable for the working conditions.

Sodium Fluorosilicate

Material Safety Data Sheet

9. Physical and Chemical Properties

9.1 **Appearance:** Free-flowing crystals
Odor: White
Color: Odorless

9.2 **Important Health, Safety and Environmental information:**
pH: Not applicable

Change of state:
Melting point: Decomposes @ 500°C (932°F)
Boiling point: Not applicable
Decomposition Temperature: 500°C (932°F)

Flash Point: Not applicable

Flammability: Non Flammable
(solid, gas)

Explosive Properties: Not available

Oxidizing Properties: Not available

Vapor Pressure: Not available

Relative Density:
Specific gravity (H_2O=1): 1
Bulk Density: 10.8 grams/ml (90 lbs/ft^3)

Solubility: 40 mg/l at 20°C (68°F) Remark: Atmospheric pressure

Partition coefficient: Not applicable

Viscosity: Not applicable

Vapor Density (air=1): Not available

Evaporation Rate: No data

9.3 **Other Information:** No data

Surface Tension: No data

MSDS No. NaSiF6-1103 Revised 10-11-03

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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: LD_{50}, 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.

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.***

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Labeling according to Directive 1999/45/EC.

Category	ID	Phrase
Symbols	T	Toxic
Phrases R	23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
Phrases S	1/2	Keep locked up and out of reach of children.
	26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

16. Other Information

16.1 Ratings:

NFPA (NATIONAL FIRE PROTECTION ASSOCIATION)

Health = 3 Flammability = 0 Instability = 0 Special = None

HMIS (HAZARDOUS MATERIAL INFORMATION SYSTEM)

Health = 3 Fire = 0 Reactivity = 0 PPE = Supplied by User; dependent on local conditions

16.2 Other Information:

The previous information is based upon our current knowledge and experience of our product and is not exhaustive. It applies to the product as defined by the specifications. In case of combinations of mixtures, one must confirm that no new hazards are likely to exist. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene, and integrity of the work environment. (Unless noted to the contrary, the technical information applies only to pure product).

To our actual knowledge, the information contained herein is accurate as of the date of this document. However, neither Solvay Fluorides, LLC nor any of its affiliates makes any warranty, express or implied, or accepts any liability in connection with this information or its use. This information is for use by technically skilled persons at their own discretion and risk and does not relate to the use of this product in combination with any other substance or any other process. This is not a license under any patent or other proprietary right. The user alone must finally determine suitability of any information or material for any contemplated use, the manner of use and whether any patents are infringed. This information gives typical properties only and is not to be used for specification purposes.

16.3 Reason for revision:

Supersedes edition: Sodium Fluorides Inc. MSDS dated 3/4/97.
Purpose of revision: Change Company name and MSDS format

pTooth Decay Trends in Fluoridated VS Unfluoridated Countries

CHOOSE YOUR ISSUE

Health Effects

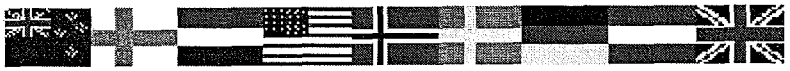
AccidentsAllergyArthritisBone DiseaseBrainCancerDental FluorosisGastrointestinalInfant ExposureImmune SystemKidneyPineal GlandReproductiveThyroid Gland

Fluoride's Benefits?

Recent StudiesTopical/SystemicU.S. v. Europe

Sources of Fluoride

OverviewToothpasteFluoridated WaterInfant FormulaPesticidesPollution



Key Findings - Tooth Decay Trends in Fluoridated vs. Unfluoridated Countries

In the second half of the 20th century, a steep decline in tooth decay occurred among children in the United States. Proponents of water fluoridation have long claimed that this reduction in tooth decay is primarily the result of adding fluoride to water.

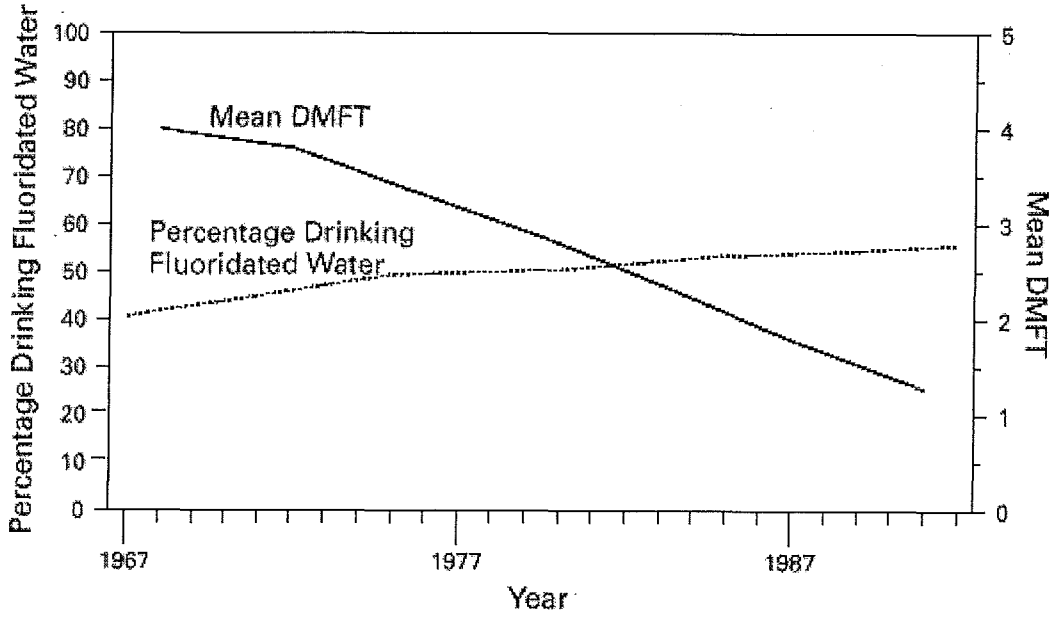
When the Centers for Disease Control (CDC) nominated water fluoridation as one of the top 10 public health achievements of the 20th century, it published a graph *(*seeFigure 1*)*, which showed the reduction of cavities in US children coupled with the increase in water systems that have been fluoridated since the 1960's. The CDC referred to the graph with the statement:

"as a result [of water fluoridation], dental caries declined precipitously during the second half of the 20th century."

However, what the CDC failed to mention is that similar declines in tooth decay have occurred in virtually every western country, most of which do not fluoridate water (seeFigure 2).

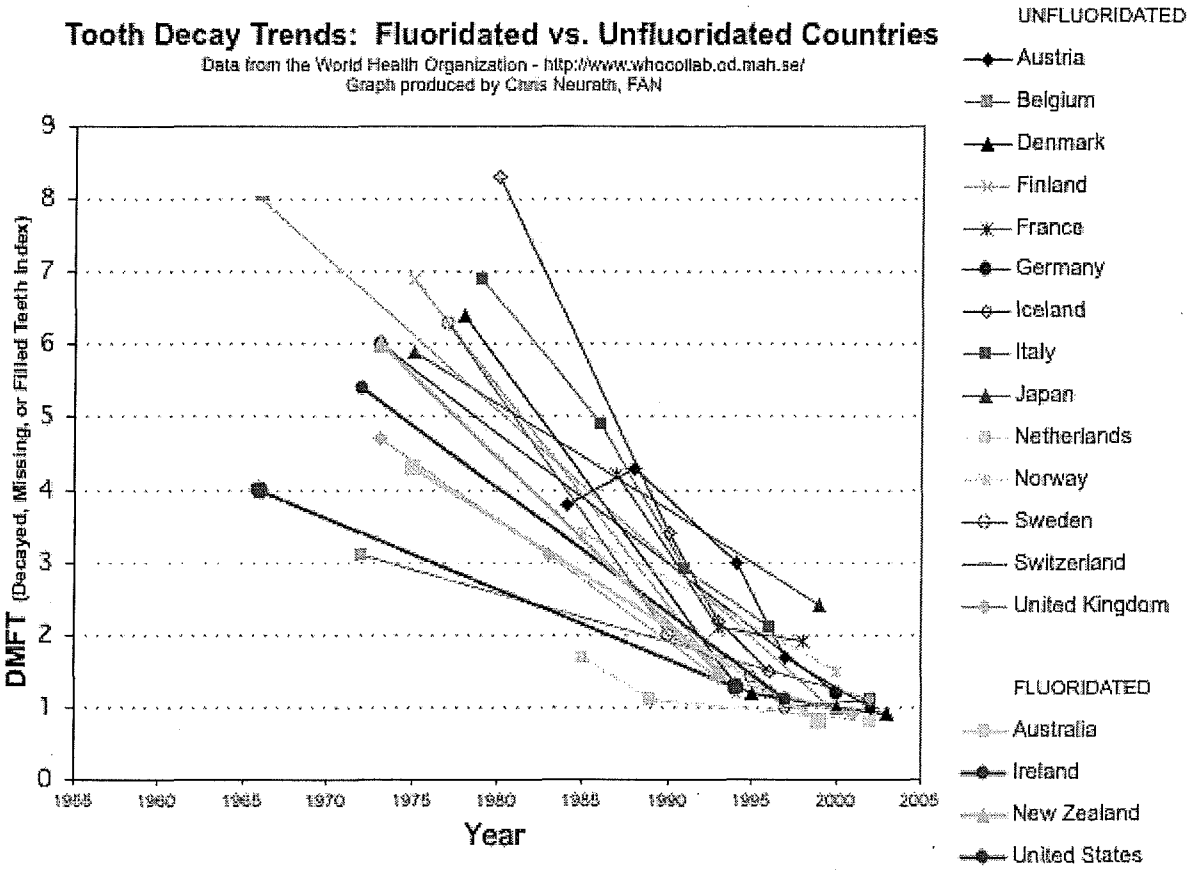
Centers for Disease Control (1999) - Tooth Decay in the U.S. vs Fluoridation Status: (back to top)

FIGURE 1. Percentage of population residing in areas with fluoridated community water systems and mean number of decayed, missing (because of caries), or filled permanent teeth (DMFT) among children aged 12 years — United States, 1967–1992



World Health Organization Data (2004) - Tooth Decay Trends (12 year olds) in Fluoridated vs. Unfluoridated

Countries: (back to top)



Back to top

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

Zurich, Switzerland	0.9	2000	No water fluoridation, but salt fluoridation is common
UK *(England & Wales)*	0.9	2000	11% of water supplies are fluoridated; no salt fluoridation
Austria	1.0	2002	No water fluoridation, but salt fluoridation is available to a limited extent.
Sweden	1.0	2005	No water fluoridation or salt fluoridation
Italy	1.1	2004	No water fluoridation or salt fluoridation
Belgium	1.1	2002	No water fluoridation or salt fluoridation
Ireland	1.1	1997	More than 50% of water is fluoridated; no salt fluoridation
Finland	1.2	2006	No water fluoridation or salt fluoridation
US	1.28	1992-1994	More than 50% of water is fluoridated; no salt fluoridation
Iceland	1.4	2005	No water fluoridation or salt fluoridation
New Zealand	1.7	2005	More than 50% of water is fluoridated; no salt fluoridation
Norway	1.7	2004	No water fluoridation or salt fluoridation
France	1.9	1998	No water fluoridation, but salt fluoridation is common
Data from WHO Oral Health Country/Area Profile Programme Department of Noncommunicable Diseases Surveillance/Oral Health WHO Collaborating Centre, Malmö University, Sweden http://www.whocollab.od.mah.se/euro.html			

Excerpts from the Scientific Literature -

"Universal Decline in Tooth Decay" in Western World Irrespective of Water Fluoridation: (back to top)

"Although the prevalence of caries varies between countries, levels everywhere have fallen greatly in the past three decades, and national rates of caries are now universally low. This trend has occurred regardless of the concentration of fluoride in water or the use of fluoridated salt, and it probably reflects use of fluoridated toothpastes and other factors, including perhaps aspects of nutrition."
SOURCE: Cheng KK, et al. (2007). Adding fluoride to water supplies. *British Medical Journal* 335(7622):699-702.

"In most European countries, where community water fluoridation has never been adopted, a substantial decline in caries prevalence has been reported in the last decades, with reductions in lifetime caries experience exceeding 75%."
SOURCE: Pizzo G, et al. (2007). Community water fluoridation and caries prevention: a critical review. *Clinical Oral Investigations* 11(3):189-93.

"Graphs of tooth decay trends for 12 year olds in 24 countries, prepared using the most recent World Health Organization data, show that the decline in dental decay in recent decades has been comparable in 16 nonfluoridated countries and 8 fluoridated countries which met the inclusion criteria of having (i) a mean annual per capita income in the year 2000 of US$10,000 or more, (ii) a population in the year 2000 of greater than 3 million, and (iii) suitable WHO caries data available.The WHO data do not support fluoridation as being a reason for the decline in dental decay in 12 year olds that has been occurring in recent decades."
SOURCE: Neurath C. (2005). Tooth decay trends for 12 year olds in nonfluoridated and fluoridated countries. *Fluoride*38:324-325.

"It is remarkable... that the dramatic decline in dental caries which we have witnessed in many different parts of the world has occurred without the dental profession being fully able to explain the relative role of fluoride in this intriguing process. It is a common belief that the wide distribution of fluoride from toothpastes may be a major explanation, but serious attempts to assess the role of fluoridated toothpastes have been able to attribute, at best, about 40-50% of the caries reduction to these fluoride products. This is not surprising, if one takes into account the fact that dental caries is not the result of fluoride deficiency."
SOURCE: Aoba T, Fejerskov O. (2002). Dental fluorosis: chemistry and biology. *Critical Review of Oral Biology and Medicine* 13: 155-70.

"A very marked decline in caries prevalence [in Europe] was seen in children and adolescents...The number of edentulous adults in Europe has also been declining considerably."
SOURCE: Reich E. (2001). Trends in caries and periodontal health epidemiology in Europe. *International Dentistry Journal*51(6 Suppl 1):392-8.

"The caries attack rate in industrialized countries, including the United States and Canada, has decreased dramatically over the past 40 years."
SOURCE: Fomon SJ, Ekstrand J, Ziegler EE. (2000). Fluoride intake and prevalence of dental fluorosis: trends in fluoride intake with special attention to infants. *Journal of Public Health Dentistry* 60: 131-9.

"Since the 1960s and 70s, however, a continuous reduction (in tooth decay) has taken place in most 'westernized' countries, it is no longer unusual to be caries-free... During the decades of caries decline, a number of actions have been taken to control the disease, and the literature describes numerous studies where one or several factors have been evaluated for their impact. Still, it is difficult to get a full picture of what has happened, as the background is so complex and because so many factors may have been involved both directly and indirectly. In fact, no single experimental study has addressed the issue of the relative impact of all possible factors, and it is unlikely that such a study can ever be performed."
SOURCE: Bratthall D, Hansel-Petersson G, Sundberg H. (1996). Reasons for the caries decline: what do the experts believe? *European Journal of Oral Science* 104:416-22.

"Caries prevalence data from recent studies in all European countries showed a general trend towards a further decline for children and adolescents...The available data on the use of toothbrushes, fluorides and other pertinent items provided few clues as to the causes of the decline in caries prevalence."
SOURCE: Marthaler TM, O'Mullane DM, Vrbic V. (1996). The prevalence of dental caries in Europe 1990-1995. ORCA Saturday afternoon symposium 1995. *Caries Research* 30: 237-55

"The aim of this paper is to review publications discussing the declining prevalence of dental caries in the industrialized countries during the past decades...[T]here is a general agreement that a marked reduction in caries prevalence has occurred among children in most of the developed countries in recent decades."
SOURCE: Petersson GH, Bratthall D. (1996). The caries decline: a review of reviews. *European Journal of Oral Science*104: 436-43.

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

"The marked caries reduction in many countries over the last two decades is thought to be mainly the result of the widespread and frequent use of fluoride-containing toothpaste... There seem to be no other factors which can explain the decline in dental caries, which has occurred worldwide during the same period, in geographic regions as far apart as the Scandinavian countries and Australia/New Zealand."
SOURCE: Rolla G, Ekstrand J. (1996). *Fluoride in Oral Fluids and Dental Plaque*. In:

Fejerskov O, Ekstrand J, Burt B, Eds. Fluoride in Dentistry, 2nd Edition. Munksgaard, Denmark. p 215.

"Although difficult to prove, it is reasonable to assume that a good part of the decline in dental caries over recent years in most industrialized countries, notably those Northern European countries without water fluoridation, can be explained by the widespread use of fluoride toothpastes. This reduction in caries has not been paralleled by a reduction in sugar intake..."
SOURCE: Clarkson BH, Fejerskov O, Ekstrand J, Burt BA. (1996). *Rational Use of Fluoride in Caries Control.* In: Fejerskov O, Ekstrand J, Burt B, Eds. Fluoride in Dentistry, 2nd Edition. Munksgaard, Denmark. p 354.

"During the past 40 years dental caries h as been declining in the US, as well as in most other developed nations of the world... The decline in dental caries has occurred both in fluoride and in fluoride-deficient communities, lending further credence to the notion that modes other than water fluoridation, especially dentrifices, have made a major contribution."
SOURCE: Leverett DH. (1991). Appropriate uses of systemic fluoride: considerations for the '90s. *Journal of Public Health Dentistry* 51: 42-7.

"In most European countries, the 12-year-old DMFT index is now relatively low as compared with figures from 1970-1974.WHO (World Health Organization) data relating to availability of fluoride in water and toothpaste appear reliable. However, these data did not explain differences between countries with respect to the DMFT index of 12-year-olds."
SOURCE: Kalsbeek H, Verrips GH. (1990). Dental caries prevalence and the use of fluorides in different European countries.*Journal of Dental Research* 69(Spec Iss): 728-32.

"The most striking feature of some industrialized countries is a dramatic reduction of the prevalence of dental caries among school-aged children."
SOURCE: Binus W, Lowinger K, Walther G. (1989). [Caries decline and changing pattern of dental therapy] [Article in German] *Stomatol DDR* 39: 322-6.

"The current reported decline in caries tooth decay in the US and other Western industrialized countries has been observed in both fluoridated and nonfluoridated communities, with percentage reductions in each community apparently about the same."
SOURCE: Heifetz SB, et al. (1988). Prevalence of dental caries and dental fluorosis in areas with optimal and above-optimal water-fluoride concentrations: a 5-year follow-up survey. *Journal of the American Dental Association* 116: 490-5.

"[D]uring the period 1979-81, especially in western Europe where there is little fluoridation, a number of dental examinations were made and compared with surveys carried out a decade or so before. It soon became clear that large reductions in caries had been occurring in unfluoridated areas. The magnitudes of these reductions are

generally comparable with those observed in fluoridated areas over similar periods of time."
SOURCE: Diesendorf, D. (1986). The Mystery of Declining Tooth Decay. *Nature* 322: 125-129.

"Even the most cursory review of the dental literature since 1978 reveals a wealth of data documenting a secular, or long term, generalized decline in dental caries throughout the Western, industrialized world. Reports indicate that this decline has occurred in both fluoridated and fluoride-deficient areas, and in the presence and absence of organized preventive programs."
SOURCE: Bohannan HM, et al. (1985). Effect of secular decline on the evaluation of preventive dentistry demonstrations.*Journal of Public Health Dentistry* 45: 83-89.

"The decline in caries prevalence in communities without fluoridated water in various countries is well documented. The cause or causes are, at this time, a matter of speculation."
SOURCE: Leverett DH. (1982). Fluorides and the changing prevalence of dental caries. *Science* 217: 26-30.

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

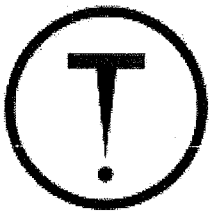
What is a Class D - Poisonous and Infectious materials?

Class D materials are those which can cause harm to your body. They are divided into three major divisions.

Division 1: Materials Causing Immediate and Serious Toxic Effects

These are materials that are very poisonous and immediately dangerous to life and health. Serious health effects such as burns, loss of consciousness, coma or death within just minutes or hours after exposure are grouped in this category. Most D-1 materials will also cause longer term effects as well (those effects that are not noticed for months or years). Examples of some D-1 materials include carbon monoxide, sodium cyanide,sulphuric acid, toluene-2,4-diisocyanate (TDI), and acrylonitrile. The symbol for Class D - Division 1 (D-1) is a skull and crossed bones inside a circle.

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).

Division 2 of Class D has two subclasses called D2A (very toxic) and D2B (toxic). While it is not a legal requirement for the WHMIS sub-classification to be reported on the Material Safety Data Sheet (MSDS) nor is it a requirement for classes D2A or D2B to be distinguished on the label, it is often possible to make this distinction using the health hazard information on the label and/or the MSDS.

Products are typically classified as D2A (very toxic) if the chemical has been shown to be carcinogenic, embryo toxic, teratogenic, mutagenic (to reproductive cells), reproductive toxic, sensitizer (to respiratory tract) or chronic (long-term) toxicity (at low doses). 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.

Communities which have Rejected Fluoridation Since 1990

View Since 1990, These US Communities have Rejected Fluoridation in a larger map

Compiled by *Fluoride Action Network*

"[I]n recent years, when towns and cities across the country have held voter referenda on fluoridation, its use has been rejected about half the time." - Chemical & Engineering News, September 4, 2006

"While city councils and water boards tend to fluoridate when they have the power, the electorate is far more divided. Over the past five years, the practice was voted down in 38 of 79 referendums, from Modesto, Calif., to Worcester, Mass." - TIME Magazine, October 24, 2005

"In about 60% of 2000 referenda held in the U.S. since 1950, fluoridation has been voted down." - Chemical & Engineering News August 1, 1988

"The big cities in the United States were mostly fluoridated by executive action in such a way as to avoid public referenda." - *James M. Dunning, Harvard School of Dental Medicine, 1984. (Quote from: Social Science & Medicine 1984, vol. 19, page 1245.)*

"The fact that nearly 3 out of every 5 communities which vote on the issue have rejected fluoridation, year after year, does in all likelihood represent a collective judgment on the part of the public that, when all things are considered, fluoridation is not an acceptable public health measure." - *Edward Groth III, PhD Dissertation, Stanford University, May 1973*

"Avoid a referendum. The statistics are that 3 out of 4 fluoridation referenda fail."- *Susan Allen, RDH, BS Fluoridation Coordinator, Public Health Dental Program, State Health Office, Florida. May 7, 1990. (See photocopy of letter)*

Amherstburg, Ontario, Canada	February 7, 2012
Bolivar, MO	February 7, 2012

Myerstown, PA	January 13, 2012
Hartland Township, MI	December 20, 2011
Moncton, New Brunswick, Canada	December 19, 2011
Dieppe, New Brunswick, Canada	December 12, 2011
Lake Cowichan, British Columbia, Canada	November 19, 2011
Williams Lake, British Columbia, Canada	November 19, 2011
Amesbury, MA	November 8, 2011
Lawrenceburg, TN	October 18, 2011
Churchill, Manitoba, Canada	October 16, 2011
New Plymouth, New Zealand	October 13, 2011
Spencer, IN	October 13, 2011
Palmer, AK	October 11, 2011
Pinellas County, Florida	October 4, 2011
College Station, TX	September 22, 2011
Slave Lake, Alberta, Canada	September 12, 2011
Hohenwald, TN	September 6, 2011
Pottstown, PA	August 16, 2011
Spring Hill, TN	August 15, 2011
Philomath, OR	August 8, 2011
Taber, Alberta, Canada	July 20, 2011
Meadow Lake, Saskatchewan, Canada	July 4, 2011
Taumarunui, New Zealand	June 30, 2011
Fairbanks, Alaska	June 6, 2011
Mount Clemens, Michigan	May 16, 2011
Lago Vista, Texas	April 21, 2011
Marcellus, MI	March 17, 2011
Independence, Virginia	February 16, 2011
Calgary, Alberta, Canada	February 8, 2011
Yellow Springs, Ohio	February 7, 2011
Verchères, Québec, Canada	February 7, 2011
Schuylkill Haven, Pennsylvania	First announced Feb 4, 2010) January 19, 2011

Sparta, North Carolina	November 15, 2010
Tellico, Tennessee	November 4, 2010
Waterloo, St. Jacobs and Elmira, Ontario, Canada	October 25, 2010
Red Bay, Alabama	September 15, 2010
Napa, California	August 17, 2010
Sandpoint, Idaho	July 24, 2010
Kaikohe, New Zealand	May 17, 2010
Kaitaia, New Zealand	May 17, 2010
Crete, Nebraska	May 11, 2010
Dakota City, Nebraska	May 11, 2010
Franklin County, Nebraska	May 11, 2010
Norfolk, Nebraska	May 11, 2010
Wahoo, Nebraska	May 11, 2010
Gatineau, Québec, Canada	May 5, 2010
Schuylkill Haven Borough, Pennsylvania	February 4, 2010
Xenia, Ohio	December 16, 2009
Beacon, New York	December 7, 2009
Amery, Wisconsin	November 30, 2009
Wisner, Nebraska	November 10, 2009
Yutan, Nebraska	November 10, 2009
Humboldt, Kansas	September 22, 2009
Wakefield, Nebraska	September 15, 2009
Thunder Bay, Ontario, Canada	July 21, 2009
Poynette, Wisconsin *(voted to remove fluoride)*	April 13, 2009
Plainfield, Vermont *(voted to remove fluoride)*	March 3, 2009
Chippewa Falls, Wisconsin *(for the 2nd time)*	February 17, 2009
Skagit County, Washington	February 10, 2009
Big Canoe, Georgia	January 8, 2009
Cranberry Portage, Manitoba, Canada	January 1, 2009
Drayton Valley, Alberta, Canada	December 31, 2008

Test Valley Borough Council (UK)	November 13, 2008
Jackman, Maine	November 4, 2008
Moose River, Maine	November 4, 2008
Corning, New York	November 4, 2008
Ainsworth, Nebraska	November 4, 2008
Aurora, Nebraska	November 4, 2008
Battle Creek, Nebraska	November 4, 2008
Bayard, Nebraska	November 4, 2008
Beatrice, Nebraska	November 4, 2008
Bridgeport, Nebraska	November 4, 2008
Broken Bow, Nebraska	November 4, 2008
Cambridge, Nebraska	November 4, 2008
Central City, Nebraska	November 4, 2008
Chadron, Nebraska	November 4, 2008
Cozad, Nebraska	November 4, 2008
Crawford, Nebraska	November 4, 2008
David City, Nebraska	November 4, 2008
Eagle, Nebraska	November 4, 2008
Friend, Nebraska	November 4, 2008
Geneva, Nebraska	November 4, 2008
Gothenburg, Nebraska	November 4, 2008
Grand Island, Nebraska	November 4, 2008
Grant, Nebraska	November 4, 2008
Hastings, Nebraska	November 4, 2008
Hebron, Nebraska	November 4, 2008
Imperial, Nebraska	November 4, 2008
Kimball, Nebraska	November 4, 2008
Lexington, Nebraska	November 4, 2008
Madison, Nebraska	November 4, 2008
Milford, Nebraska	November 4, 2008
Mitchell, Nebraska	November 4, 2008
North Platte, Nebraska	November 4, 2008
Ord, Nebraska	November 4, 2008
Pawnee City, Nebraska	November 4, 2008

Pierce, Nebraska	November 4, 2008
Plainview, Nebraska	November 4, 2008
Ravenna, Nebraska	November 4, 2008
Schuyler, Nebraska	November 4, 2008
Scottsbluff, Nebraska	November 4, 2008
Shelton, Nebraska	November 4, 2008
Sidney, Nebraska	November 4, 2008
St. Paul, Nebraska	November 4, 2008
Stanton, Nebraska	November 4, 2008
Stromsburg, Nebraska	November 4, 2008
Sutherland, Nebraska	November 4, 2008
Sutton, Nebraska	November 4, 2008
Tekamah, Nebraska	November 4, 2008
Valentine, Nebraska	November 4, 2008
Weeping Water, Nebraska	November 4, 2008
Wilber, Nebraska	November 4, 2008
Wood River, Nebraska	November 4, 2008
Wymore, Nebraska	November 4, 2008
York, Nebraska	November 4, 2008
Prairie du Chien, Wisconsin	November 4, 2008
Hyndburn, Lancashire, England	September 23, 2008
Pendle, Lancashire, England	September 18, 2008
Alamo Heights, Texas	September 8, 2008
Alexandra and Earnslceugh/Manuheriki, New Zealand	September 8, 2008
Cromwell, New Zealand	August 18, 2008
Isle of Man	June 12, 2008
Elba, New York	June 4, 2008
Littleton, Massachusetts	May 10, 2008
Yarmouth, Massachusetts	May 6, 2008.
Dryden, Ontario, Canada	April 2008
Quebec City, Canada (after 36 years of fluoridation)	April 1, 2008
Welland, Pelham, and parts of	February 2008

Thorold, Ontario, Canada	
Poughkeepsie, New York	February 2008
Manila, Humboldt County, Calfornia	February 2008
Elgin City Council, Texas	November 2007
Waitaki District Council, New Zealand	October 2007
Juneau, Alaska	October 2007
O'Connor UD, Sparta, White County, Georgia	August 8, 2008
Quebeck Walling UD, Sparta, White County, Georgia	August 3, 2008
Cobleskill Village, Schoharie County, New York	August 2007
Marshall County BUP#1, Lewisburg, Marshall County, Georgia	July 27, 2008
Rotherham, Yorkshire, UK	June 2007
Conewango Township, Pennsylvania	May 2008
Glade Township, Pennsylvania	May 2008
Mead Township, Pennsylvania	May 2008
Pleasant Township, Pennsylvania	May 2008
Big Creek Utility District, Grundy County, Georgia	May 7, 2008
Cagle-Fredonia Utility District, Big Creek, Sequatchie, Georgia	May 7, 2008
Altoona, Pennsylvania	May 2007
Beach Haven, New Jersey	April 2007
Sulphur Rock, Arkansas	April 2007
LaGuardo UD, Lebanon, Wilson County, Georgia	May 20, 2008
Lebanon Water System, Wilson County, Georgia	May 20, 2008
Mt Desert Water District, Maine	March 5, 2007
Martin County, Florida	December 19, 2006
Juneau, Alaska	December 11, 2006
Ashland, Oregon	November 21, 2006
Central Bridge Water District, New York	November 21, 2006

Lenapah, Oklahoma	November 21, 2006
Page, Arizona	November 7, 2006
Lincoln, Maine	November 7, 2006
Rockford, Iowa	January 12, 2006
Golden, British Columbia, Canada	November 19, 2005
Lafayette, Tennessee	November 9, 2005
Bellingham, Washington State	November 8, 2005
Springfield, Ohio	November 8, 2005
Xenia, Ohio	November 8, 2005
Tooele, Utah	November 8, 2005
Mammoth Lakes, California	November 8, 2005
Homer, New York	November 1, 2005
Hood River, Oregon	May 2005
Neosho, Missouri	April 5, 2005
Pagosa Springs, Colorado	March 2005
Snohomish, Washington State	January 2005
Lancaster, Ohio	November 2, 2004
Hutchinson, Kansas	November 2, 2004
Clarksdale, Mississippi	October 25, 2004
Milton, Washington State	September 20, 2004
Telluride, Colorado	September 2004
Sumner, Washington State	August 2, 2004
South Blount Water District, Tennessee	June 2004
Chippewa Falls, Wisconsin	April 2004
Honolulu, Hawaii	January 28, 2004
Lancaster, Ohio	January 12, 2004
Burns Lake, British Columbia, Canada	June 25, 2003
Dutton-Dunwich, Ontario, Canada	June 2003
West Elgin, Ontario, Canada	June 2003
Sequim, Washington State	May 7, 2003.
York, Nebraska	May 6, 2003
Columbiana, Alabama	May 2003
Canton, New York	February 18, 2003
Shaler, Pennsylvania	February 11, 2003

Billings, Montana	November 5, 2002
Kalispell, Montana	November 5, 2002
Washoe County, Nevada	November 5, 2002
Methuen, Massachusetts	November 5, 2002
Redding, California	November 5, 2002
Watsonville, California	November 5, 2002
Texarkana, Arkansas	November 5, 2002
Ashdown, Arkansas	November 5, 2002
Oneida, New York	August 6, 2002
Franklin, North Carolina	May 2002
Plainville, Massachusetts	April 1, 2002
Monroe, Louisiana	February 26, 2002
Colorado Springs, Colorado	January16, 2002
Kennewick, Washington	January 15, 2002
Benninton, Vermont	January 8, 2002
Lanai, Hawaii	January 2002
Cobalt, Ontario, Canada	December 11, 2001
Erie, Colorado	November 2001
Modesto, California	November 7, 2001
Worcester, Massachusetts	November 7, 2001
Flagstaff, Arizona	November 7, 2001
Sutherlin, Oregon	November 7, 2001
Kamloops, British Columbia, Canada	October 13, 2001
White Salmon, Washington	September 2001
Goldendale, Washington	September 2001
Bishopville, South Carolina	June 2001
Harper, Kansas	May 31, 2001
Brewster, Massachusetts	May 15, 2001
McPherson, Kansas	April 3, 2001
Norridgewock, Maine	May 5, 2001
Blue River, Wisconsin	February 2001
Willamina, Oregon	January 2001
Ithaca, New York	November 7, 2000
Spokane, Washington	November 7, 2000

Brattleboro, Vermont	November 7, 2000
Wenatchee, Washington	November 7, 2000
Shawano, Wisconsin	November 7, 2000
Nibly City, Utah	November 7, 2000
Hyrum City, Utah	November 7, 2000
Providence City, Utah	November 7, 2000
Smithfield City, Utah	November 7, 2000
Logan City, Utah	November 7, 2000
River Heights, Utah	November 7, 2000
Pequannock, New Jersey	November 7, 2000
Ozark, Missouri	November 7, 2000
Wooster, Ohio	November 7, 2000
Squamish, British Columbia, Canada	October 16, 2000
Woodside, California	September 2000
Ste. Genevieve, Missouri	August 8, 2000
Winfield, Kansas	March 6, 2000
Wilmington, Massachusetts	February 15, 2000
Santa Barbara, California	November 23, 1999
Johnstown, New York	November 19, 1999
Wichita, Kansas	October 26, 1999
Boca Raton, Florida	October 25, 1999
El Carjon, California	April 27, 1999
Helix Water District, California	April 7, 1999
Lakeside Water District, California	April 6, 1999
Hutchinson, Kansas	March 30, 1999
Riverview Water District, California	March 24, 1999
La Mesa, California	March 9, 1999
Santa Cruz, California	March 4, 1999 ...banned
Bremerton, Washington	February 2, 1999
Olympia, Washington	December 15, 1999
Seward, Nebraska	November 3, 1998
Whitehorse, Yukon Territory, Canada	July 28, 1998... quit after 30 years
Grand Island, Nebraska	May 13, 1998... quit
Norfolk, Nebraksa	May 13, 1998

North Platte, Nebraska	May 13, 1998
Washington, Missouri	April 7, 1998
Kitmat, British Columbia, Canada, Canada	March 1998... quit
Hot Springs, Arkansas	February 1998
Ridgefield, Oregon	December 22, 1997
Largo, Florida	July 15, 1997
Clearwater, Florida	July 15, 1997
North Redington Beach, Florida	July 15, 1997
Amsterdam, New York	May 21, 1997
Suisun City, California	May 1, 1997
Yardly, Pennsylvannia	April 16, 1997
Village of Orfordville, Wisconsin	December 9, 1996
Western Nassau County, New York	November 21, 1996... quit after 23 years
Kelowna, British Columbia, Canada	November 16, 1996... quit after 42 years
Gothenberg, Nebraska	December 1996
Bloomer, Wisconsin	November 6, 1996
Kodiak, Alaska	July 12, 1996
Carle Place, New York	February 1, 1996... quit
Winter Springs, Florida	January 10, 1996
Pasco, Florida	December 14, 1995
York, Pennsylvannia	July 29, 1995
Thurmont, Maryland	February 3, 1994
Albany, New York	December 8, 1994
Middletown, Maryland	November 1993... quit
Barnstable, (Cape Cod) Massachusetts	November 4, 1993
Wagoner, Oklahoma	June 17, 1993
Redwood Valley, California	February 6, 1993
Los Altos Hills (Purissima) California	1993
Campbell River, British Columbia, Canada	April 1993... quit after 33 years
Port Hardy, British Columbia, Canada	November 1993... quit after 19 years

Squamish, British Columbia, Canada	November 1993... quit after 20 years
Fort Smith, Arkansas	November 3, 1992
Milltown, Wisconsin	October 17, 1992
Bellingham, Washington	May 19, 1992
Comox/Courtenay, British Columbia, Canada	February 1992
Palm Beach County, Florida	October 22, 1991
Ketchikan, Alaska	October 2, 1991
Suffolk County, New York	August 15, 1991
Davis, California	December 14, 1990... 5th rejection
Morgan Hill, California	March 7, 1990... quit

Town council passes moratorium on putting artificial fluoridation into drinking water

Town had suspended artificial fluoridation last April

By Ron Giofu/The Amherstburg Echo
Updated 1 month ago

Town council passes moratorium on putting artificial fluoridation into drinking water

By Ron Giofu

The Amherstburg Echo

AMHERSTBURG — Artificial fluoridation will stay out of Amherstburg's drinking water after town council passed a moratorium against adding fluoride Monday night.

Town council was unanimous in passing a motion put forward by Councillor Carolyn Davies that called for the moratorium to be put into place. Her motion read "that a moratorium be put on future purchase and installation of new municipal water fluoridation equipment and future purchase and use of fluoridation chemical known as hydrofluorosilicic acid (H2SiF6) containing silicofluoride and further that administration be directed to request from government jurisdictions including Health Canada, the Ontario Ministries of Labour and Environment, evidence ensuring that town employees and any others working with the hydrofluorosilicic acid process are not put in harm's way, as required by the Ontario Health and Safety Act (1990)."

Fluoride is the legal and financial responsibility of municipal governments, said Davies and that more information is now available that when fluoride was first introduced roughly 60 years ago.

"I think we've heard more peer reviews and scientific reviews that didn't exist in the '40s or the '50s," she said.

The town had already suspended artificial water fluoridation last April awaiting information on upgrades and repairs to the system and methodology in providing fluoridation. That information was to be provided by the town's consultants CH2M Hill. However, Davies said with her motion now passed, the purchase of any equipment and any subsequent information becomes "a moot point" with the town not wanting fluoride re-introduced.

"Why spend taxpayers' money on something that has proven evidence of human harm?" she asked.

Davies added she is confident there will be no evidence to the contrary to come forth proving there is are no safety risks to adding fluoride to drinking water.

"I think we should go through with it," said Councillor Bart DiPasquale of the moratorium. "Other communities have done it. Let's go through with it and move on."

Kimberly DeYong of Fluoride Free Windsor and Heather Gingerich, director of the International Medical Geology Association, told council of their research in respect to potential risks fluoride poses to both human health and environment.

DeYong said Amherstburg was the only town not served by the Windsor Utilities Commission to still use fluoride in its water. She added that 13 Canadian municipalities in the last 15 months to stop putting fluoride in its drinking water.

"Our water is something that should be pure. It should not be used to deliver medication," said DeYong.

Gingerich recommended that council not resume artificial fluoridation, noting that it would comply with environmental regulations, protect people including the unborn and elderly and allow provincial public health care dollars to be targeted in other ways. She noted that people begin to show negative impacts in the third generation of exposure.

Several local residents also urged council to eliminate artificial fluoridation.

"As a private resident, I would like to be able to be confident that the water we are drinking is water," said Lorene Clayton.

If water is fluoridated, she said people couldn't even make soup without being exposed.

"I'd love to be able to make that choice," she said, of being able to choose water that hasn't been fluoridated.

"I would like to urge council to take the time and review what has been presented tonight," said Pat Andrews. "I'd like to be able to drink water that is just water."

Christine Moody quoted from a **Nov. 15, 2011 letter by Dr. Hardy Limeback, professor and head of preventive dentistry at the University of Toronto**.

The letter read, in part, that 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."

Limebeck'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."

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.

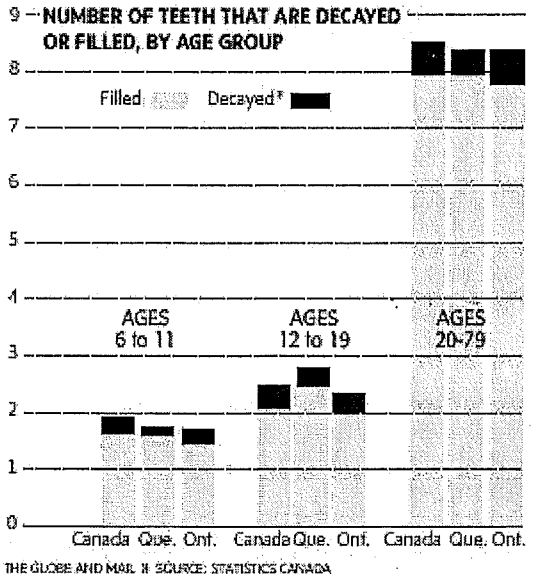
Quebeckers have more cavities than people in Ontario, but the difference is slight. Among children 6 to 19, considered the most decay-prone part of the population, the rate in Ontario was lower by less than half a cavity per child.

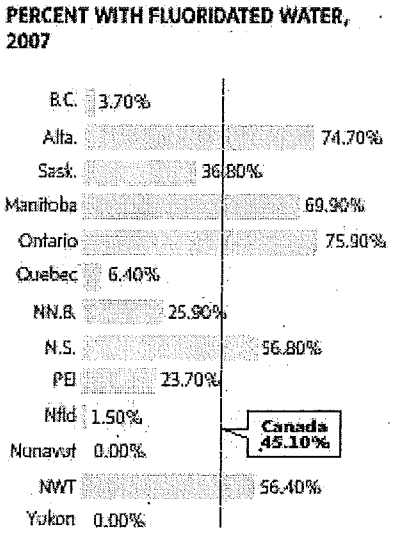
In the 6-11 age group, Ontario kids have 3.5 per cent fewer cavities than those in Quebec: 1.7 cavities compared to 1.76 in Quebec.

In the 12-19 age group, Ontario youths have 15.8 per cent fewer cavities than those in Quebec: 2.35 cavities compared to 2.79.

Fluoride advantage not all that clear

Statistics Canada studied the dental health of more than 5,000 Canadians between 2007 and 2009. The cavity rates in Ontario, where fluoridation is widespread, were remarkably similar to those in Quebec, where fluoridation is uncommon.





THE GLOBE AND MAIL ■ SOURCE: STATISTICS CANADA

Details of the cavity rates in the two provinces have been compiled by Statistics Canada in a study it conducted recently into the health status of Canadians. Experts peered into the mouths of more than 5,000 Canadians from 2007 to 2009, tallying the number of cavities and teeth with filings, to try to get an idea of the state of oral health of the nation.

After a request from The Globe and Mail for a breakdown of the cavity rates by province, Statistics Canada tabulated the figures for Ontario and Quebec, where it said it had a sufficient number of people to be a representative sample.

Statscan said it couldn't compile meaningful data for British Columbia and Alberta, which are in a similar situation. British Columbia has practically no one drinking fluoridated water, while nearly three-quarters of Albertans rely on municipal supplies where the chemical is added.

The paper sought the information to see what light it would shed on the effectiveness of fluoridation, which has been touted by the U.S. Centers for Disease Control and Prevention as one of the top 10 great public health achievements of the 20th century, and is endorsed by all dental associations in the country and by Health Canada.

But the results showed that if fluoridation is the only major difference between the two provinces, the chemical is preventing fewer than half a cavity per child in Ontario.

Health Canada down played the significance of the findings.

"While accurate," the data on the children are "an incomplete picture of the tooth decay situation.... [and] cannot be used to form conclusions regarding the efficacy of fluoride use in water," Health Canada said.

The federal department said firm conclusions can't be drawn from the Statscan survey because it didn't collect assessments on individual intakes of the chemical. To make a proper assessment, Health Canada said it would need detailed information on whether people in the two provinces differ in their intake fluoride supplements, drink tap water or bottled water, and use fluoridated toothpaste.

But 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."

Although fluoridation is touted as an unalloyed benefit by public health agencies, which estimate it cuts cavity rates by 20 per cent to 40 per cent, many community groups have sprung up across Canada lobbying to stop the practice, which is subject to repeal by local referendums. Some health professionals are worried fluoridation may have under-appreciated risks.

While fluoride toughens the outside of teeth to make them more resistant to bacteria-causing decay, a number of medical journal studies have linked exposure to altered thyroid function, and to reduced IQ levels in children, although the intellectual impairments were found at levels of the chemical in water well above those used for municipal supplies.

The most worrisome study, by Harvard researchers, appeared in 2006 in the journal Cancer Causes and Control and found that boys aged 7 exposed to high levels of fluoridated water were about four times more likely to develop childhood osteosarcoma. It's a rare bone cancer that felled Canadian icon Terry Fox and almost always leads to amputations.

There has also been a worldwide reduction in cavity rates, regardless of whether countries use the chemical, suggesting factors other than adding it to water supplies are at work.

One theory is that most people are already getting adequate exposure to fluoride through toothpastes, so the amounts in water aren't making much difference in tooth decay rates.

"The parallel reduction in caries [cavities] incidents in countries with a lot of fluoridation and countries with not much fluoridation is quite dramatic," says Warren Bell, former head of the Canadian Association of Physicians for the Environment, a group that questions the practice.

Dr. Limeback said factors that might be preventing caries include increased exposure to vitamin D, better oral hygiene, less sugar consumption, and even antibiotics.

When fluoridation started 60 years ago, doctors thought swallowing the chemical was beneficial by strengthening teeth from the inside out. Dr. Limeback said more recent research shows that if there is a benefit, it is from the topical application of fluoride to the surface of teeth, which suggests that brushing with a toothpaste is more effective than drinking water containing the chemical.