

Water Fluoridation Harms Susceptible Populations

London Board of Health

Oct 16, 2008

Presented by:

Carole Clinch BA, BPHE
Research Coordinator



**People for
Safe Drinking
Water**

No Evidence of Safety

Hydrofluorosilicic acid has NEVER BEEN TESTED FOR SAFETY. (Letters from the US EPA, NSF, US FDA, Health Canada)

No peer-reviewed paper has demonstrated safety to our knowledge.

THEREFORE

Turn it off until you can prove that it is safe.

Fluorosis Disease

There has been fluorine poisoning as long as there have been plants, animals, and people – mostly associated with volcanic action.



Today fluorine poisoning is widespread, and largely undiagnosed in North America due to ubiquitous exposures and uses of fluoride compounds and the lack of training to diagnose and treat fluorosis disease.

Fluoride Concentration, by specific independent analysis (Individual samples will vary)

Coca Cola Classic.....	0.98 ppm
Diet Coke	1.12 ppm
Sprite.....	0.72 ppm
Lucerne 2% Milk	0.72 ppm
Minute Maid orange juice	0.98 ppm
Gerber Graduate Berry Juice	3.0 ppm
Gerber White Grape Juice	6.8 ppm
Welch's White Grape Juice (concentrate)	1.8 ppm
Hawaiian Punch.....	0.85 ppm
Fruit Loops	2.1 ppm
General Mill's Wheaties.....	10.1 ppm
Kellogg's Shredded Wheat	9.4 ppm
Post's Grape Nuts cereal	6.4 ppm



Fluorosis Disease: Definition

“a neglected, untreatable disease in the public health domain; afflicts multiple tissues, organs and systems; afflicts young and old without gender discrimination, no treatment but easily preventable through practice of interventions upon diagnosis at early stages; recovery within a fortnight.”

Prof. (Dr.) A.K. Susheela, F.A.Sc., F.A.M.S. Ashoka Fellow Executive Director,
Fluorosis Research Foundation of India

The world's leading authority on fluorosis with over 34 years of clinical and research work with this disease.

Dr. A.K. Susheela reports that her medical file from North America is larger than any other file.

Fluoride Dose is determined by

Body size – small body size requires smaller dose

Health of kidney – our body's filter for toxins

Nutritional status – vitamins/minerals protect us

How much fluoride you ingest from all sources
(air, water, beverages made with fluoridated water, food)

Fluoride and the Developing Nervous System

By

Dr. Vyvyan Howard M.D., PhD

Professor of Bioimaging, School of Biomedical Science, University of Ulster

President, International Society of Doctors for the Environment (ISDE)

Toxico-pathologist interested in infant and fetal toxicology &
toxicological properties of nanoparticles.

US Steelworkers Union Hall, Toronto, Canada

August 11, 2008

presented by

Carole Clinch

Research Coordinator



People for
Safe Drinking
Water

Evidence of Harm

Criminal Courts

“beyond all reasonable doubt” – 99% certainty

Civil Courts

“balance of probabilities” – 51% certainty

Precautionary Principle

Ekstrand J, et al. (1981). No evidence of transfer of fluoride from plasma to breast milk. British Medical Journal 283: 761-2.

1.5mg/L fluoride administered orally

Blood levels of Fluoride increased

Breast milk levels of Fluoride remained stable

"These findings show that plasma fluoride is poorly transferred to breast milk and infants thus receive almost no fluoride during breast feeding... The existence of a physiological plasma-milk barrier against fluoride suggests that the newborn is actively protected from this halogen."

What is the level of fluoride in human breast milk?

0.01 ppm or 10 parts per billion

This is 100 times lower than what is proposed to be safe in drinking water

The fact that we have evolved a system of “protecting” the infant via maternal breast milk tells us that this element has been specifically excluded.

WHY?

NATURE has found it best to keep this ion (fluoride) away from the newborn.

The Dose and the Timing Make the Poison

23 new human studies demonstrating Neurotoxic Effects of fluoride

“Delivering minute amounts of toxins to developing fetuses, at the right time, can result in life-long disability or disease.”

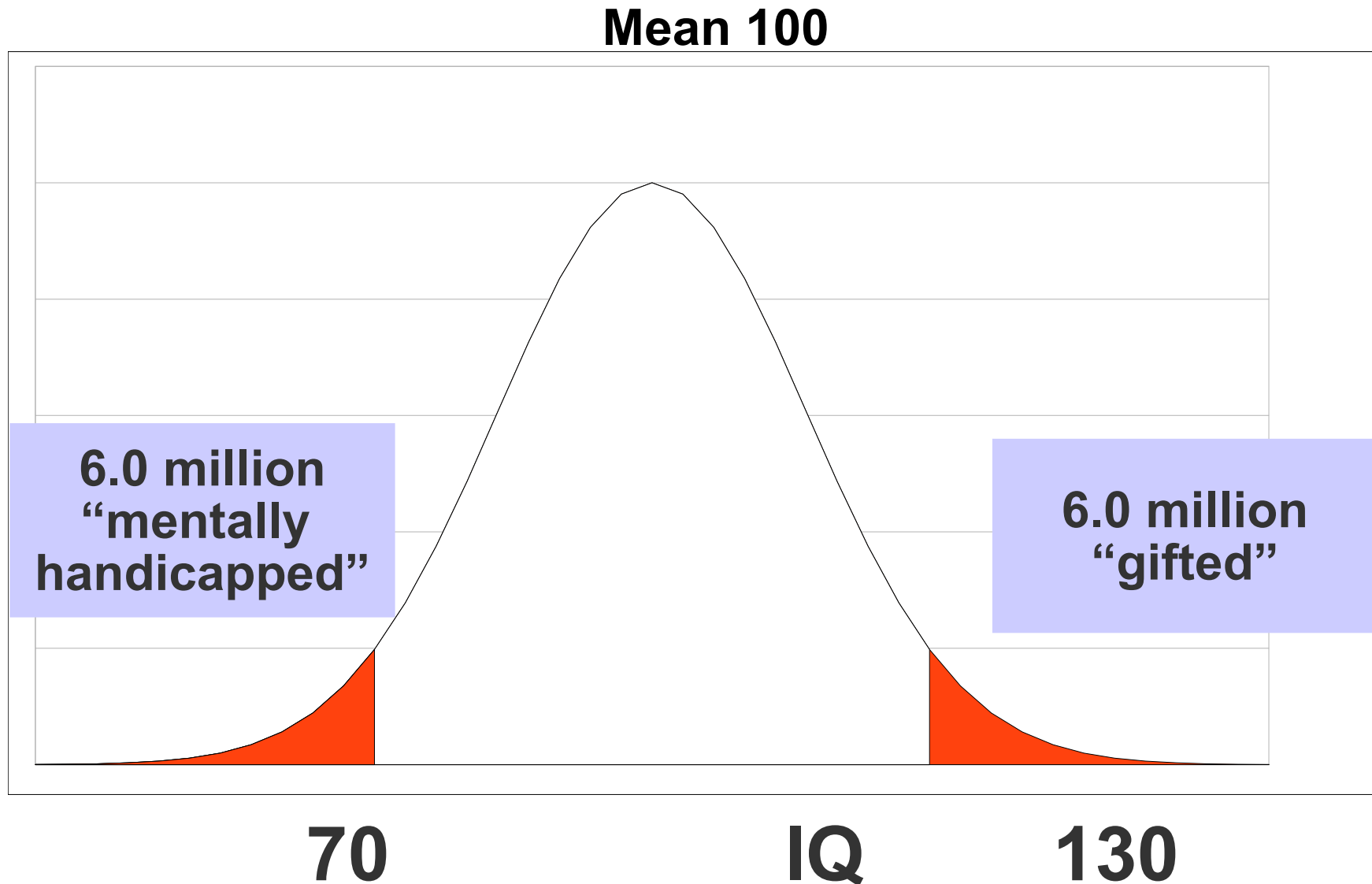
(Ambachsteer et al. 2007)

Tang QQ,, Du J, Ma HH , Jiang SJ,, Zhou XJ. 2008 Fluoride and Children's Intelligence: A Meta-analysis. Biol Trace Elem Res. Aug 2008 Epub ahead of print.
<http://www.ncbi.nlm.nih.gov/pubmed/18695947?dopt=AbstractPlus>

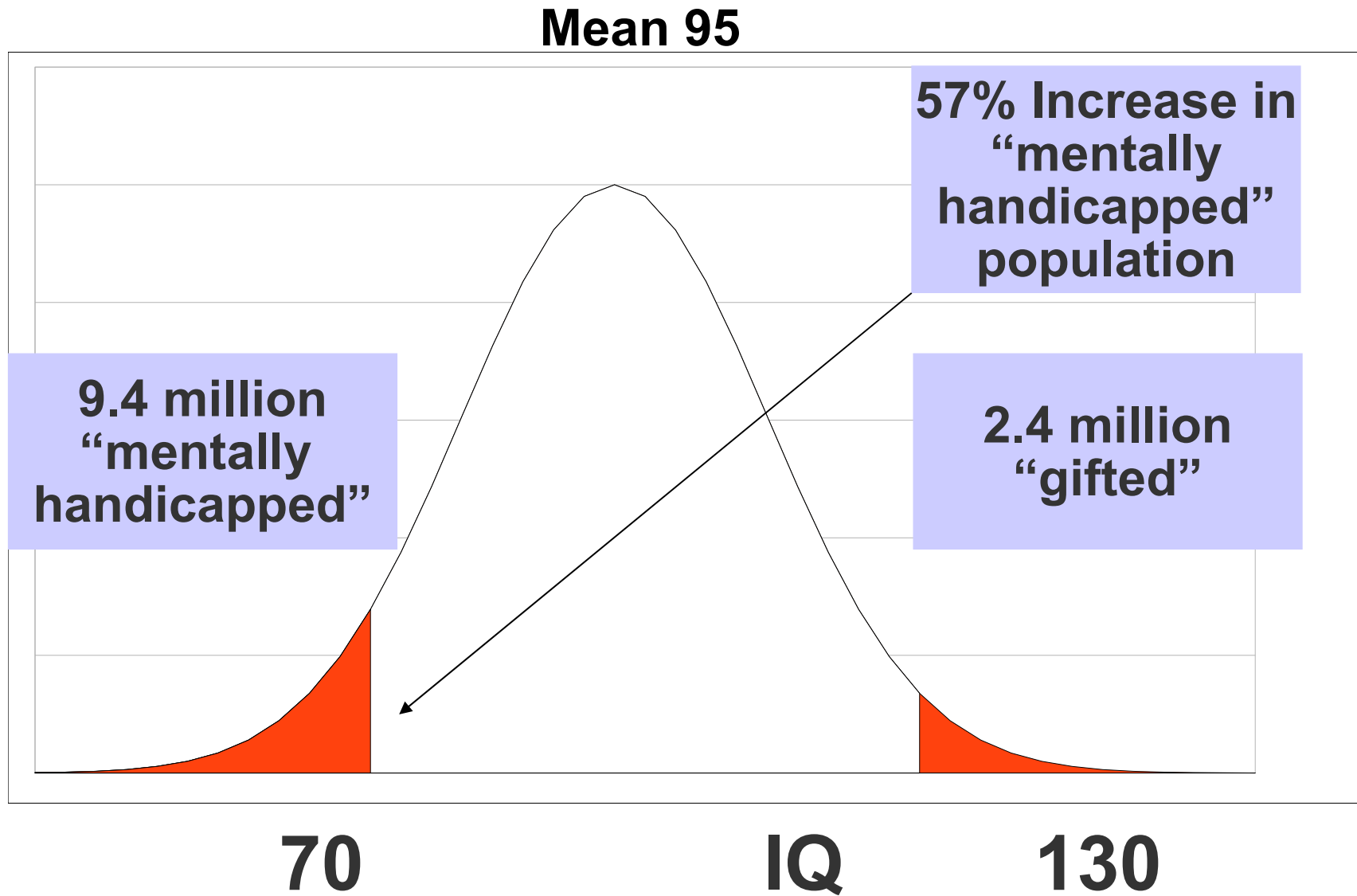
Connett M, Limeback H. Fluoride and its effect on human intelligence. A systematic review. 2008 [IADR 86th General Session & Exhibition](#)

The significance of Small Effects:

Effects of a small shift in IQ in distribution in a population of 260 million (Europe)



5 Point Decrease in Mean IQ



Implications of a 5-10 Point Decrease in Mean IQ

- For the individual it may not be noticeable
- For the population you have increased the number of people requiring social, medical, economic assistance
- This is very expensive and very undesirable
- If this is what fluoride is doing, then we should stop it - **NOW**

Scientific Evidence on Adverse Effects of Fluoride on Human Tissues

Due to Fluoride in Drinking Water

Due to Fluoride in Foods and Beverages

Due to Fluoride in Dental Products

Due to Fluoride in Air

A Treatise on Fluorosis

by

Prof. (Dr.) A.K. Susheela, F.A.Sc., F.A.M.S. Ashoka Fellow Executive
Director, Fluorosis Research Foundation of India

3 Forms of Fluorosis

Skeletal Fluorosis

Dental Fluorosis

Soft Tissue Fluorosis appears before skeletal and dental fluorosis

NOTE: Dr. Susheela reports that her medical file from North American citizens is larger than her medical file from India.

Early signs of soft tissue fluorosis disease

GI Complaints (IBS – Colic symptoms)

Symptoms

- pain in the stomach,
- gas formation and a feeling of having a bloated stomach,
- constipation, followed by intermittent diarrhea,
- nausea,
- vomiting,
- loss of appetite

Treatment

- Identify and eliminate major sources of fluoride exposure
- Eat foods high in vitamin C,E, calcium, antioxidants, etc.
- **IF** fluorosis is not too advanced, (dental or skeletal)
- **THEN** the patient will recover good health after 2 weeks

NOTE: dental and skeletal fluorosis are more advanced, permanent manifestations of fluorosis

Prevention is the key

It is so simple to do



The Evidence

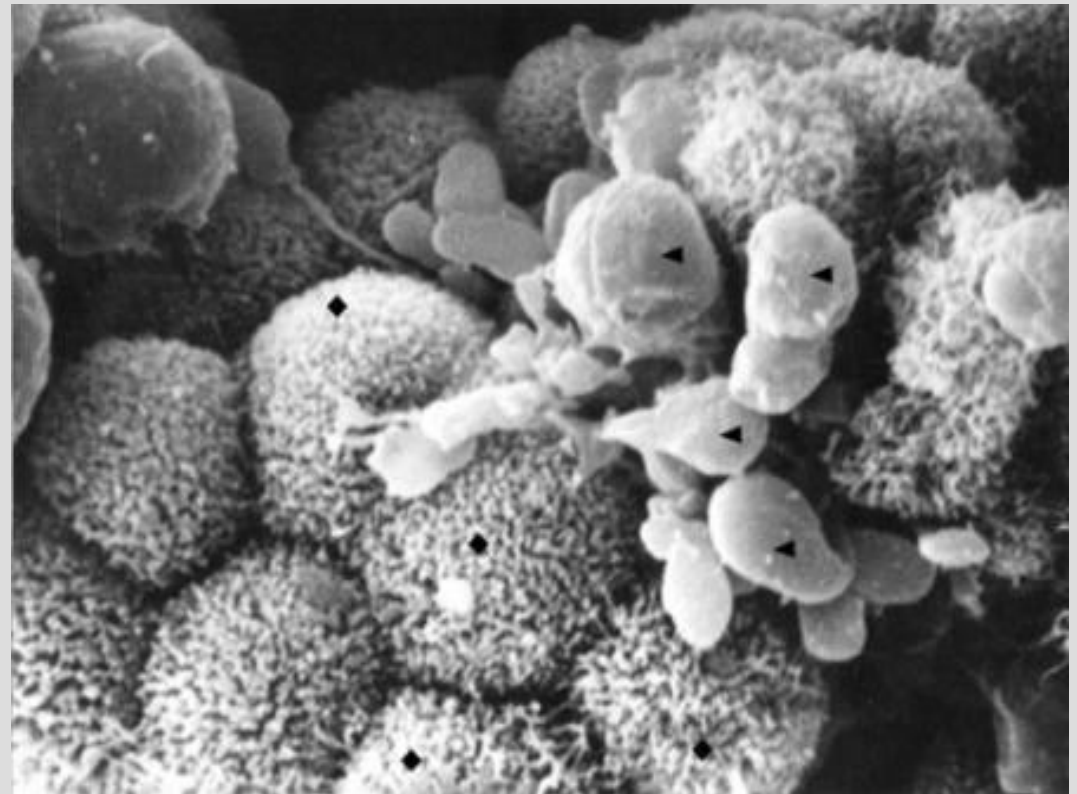
GI Tract Mucosa Normal

Fig.1

Scanning electron micrograph of Gastro-intestinal mucosa of a normal healthy adult individual (control)

(1) columnar cells studded with microvilli on the cell surface. The microvilli are responsible for absorbing nutrients from the diet

(2) The white mass spread around the mucosa is the mucus which helps in comfortable bowel movement



GI Tract Mucosa

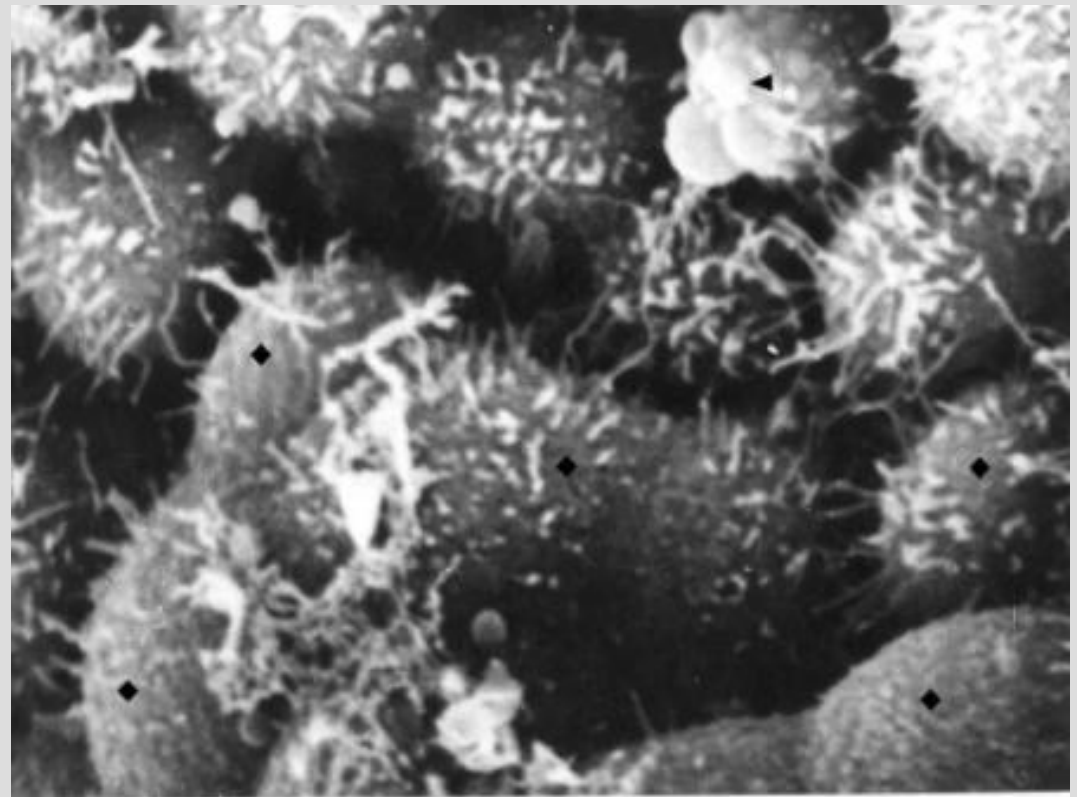
Irritable Bowel Syndrome

Fig.2:

Scanning electron micrograph of Gastro-intestinal mucosa of an individual suffering from IBS consuming water contaminated with 1.2 ppm (mg/l) of fluoride.

Note: The columnar cell surfaces are exposed (naked):

- microvilli are lost
- very little mucus secretion seen on the mucosal surface



GI Tract Mucosa

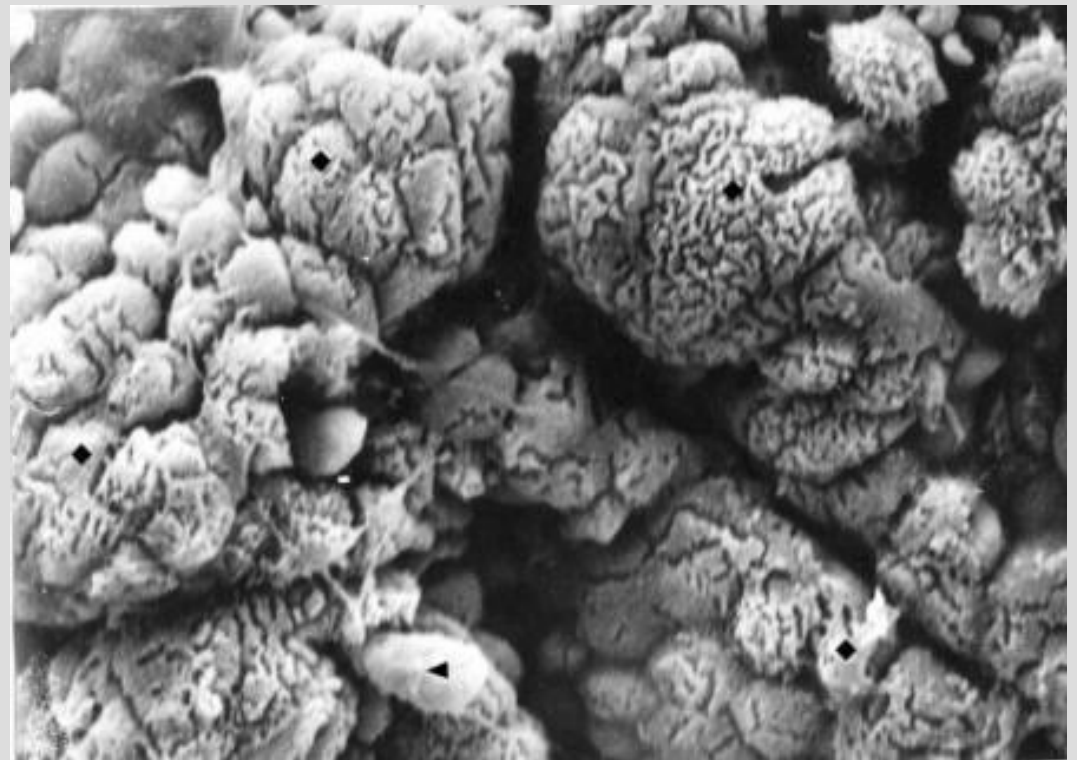
Irritable Bowel Syndrome

Fig.3 :

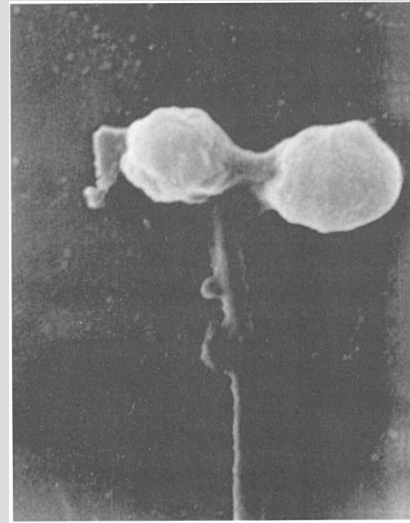
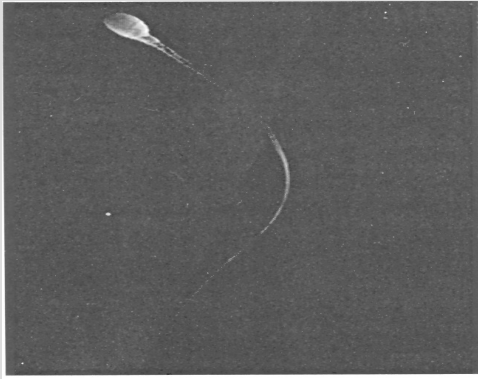
Scanning electron micrograph of Gastro-intestinal mucosa, of an individual suffering from IBS

Note: The columnar cell surfaces are exposed (naked) and appear:

- cracked
- no microvilli
- no mucus secretions are seen

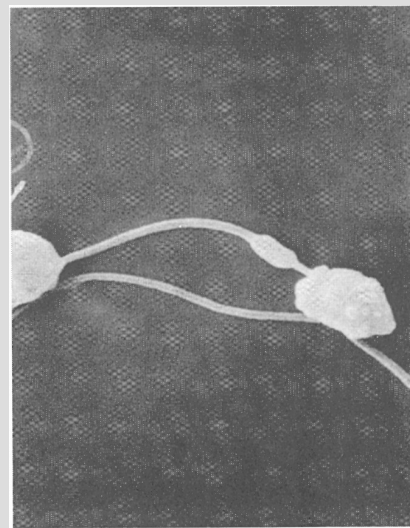
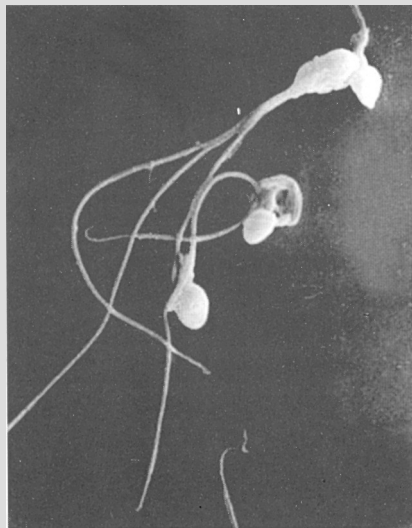


Scanning Electron Micrographs of Abnormal Human Spermatozoa from individuals with fluorosis disease



Lowered Testosterone levels nmol/L

- Sample (30): 16.1 ± 8.8
-
- Control (26): 24.8 ± 5.6



Male infertility with abnormality in sperm morphology, oligospermia (deficiency of sperm), azoospermia (absence of sperm)

Fluorosis and Thyroid Gland Malfunction

Susheela 2005

Study Group (dental fluorosis – no iodine deficiency)

- **100% abnormal thyroid hormone levels**

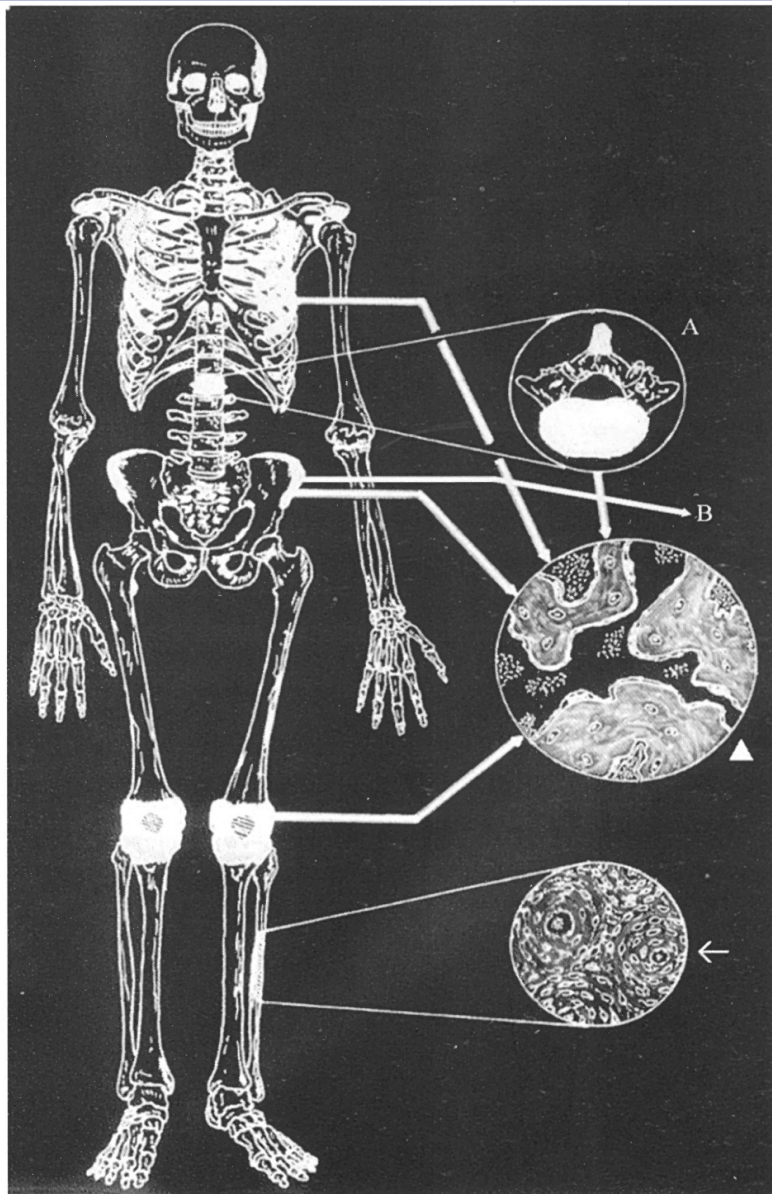
Control Groups (no dental fluorosis – no iodine deficiency)

- In control I group **50% had abnormal thyroid hormone levels**
- In control II group **45.4% had abnormal thyroid hormone levels.**

Fluoride Concentrations

Study Group	= 1.1 to 14.3 mg F ⁻ /L	(mean 4.37 mg F ⁻ /L)
Control Group 1	= 0.14 to 0.81 mg F ⁻ /L	(mean 0.23 mg F ⁻ /L)
Control Group 2	= 0.14 to 0.73 mg F ⁻ /L	(mean 0.41 mg F ⁻ /L)

Human Skeleton



Skeletal Fluorosis:

- Pain develops in **spine, knees, hips and large joints** where cancellous bone is located

Skeletal Fluorosis in Forearm



Normal forearm X-ray showing smooth outer and inner surfaces of the bone

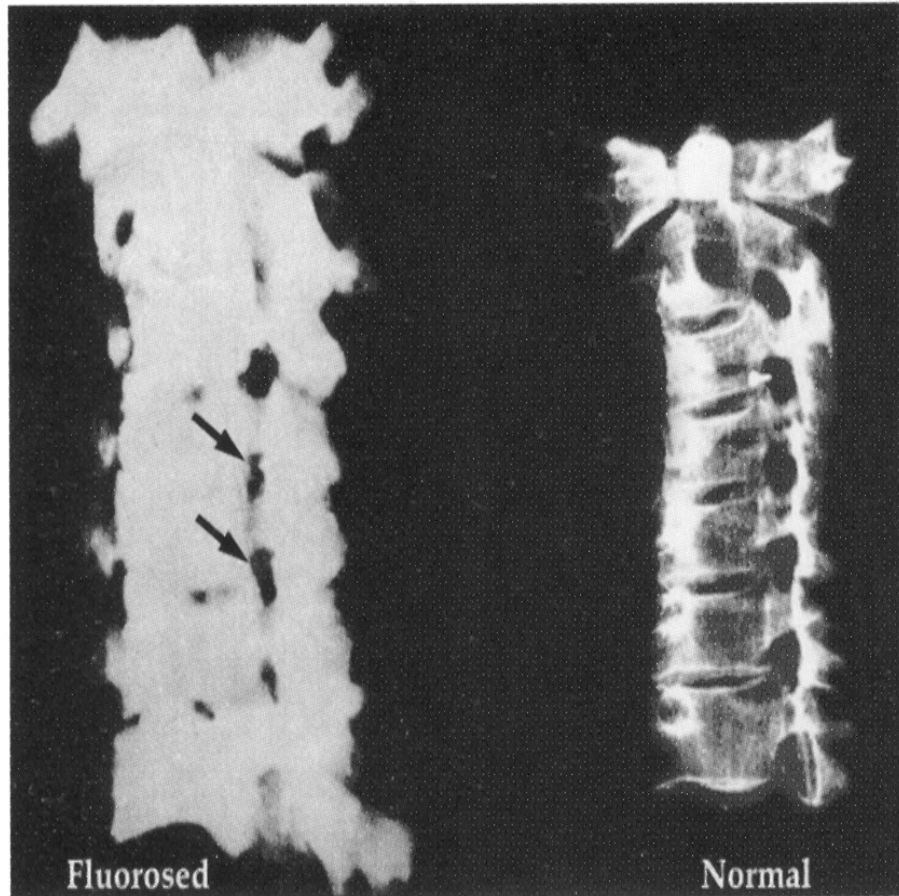
Forearm X-ray of a patient showing increase in bone density and calcification of the interosseous membrane

Photo: Forearm X-ray of patient showing increase in bone density and calcification of the interosseous membrane due to over-exposure of fluoride.

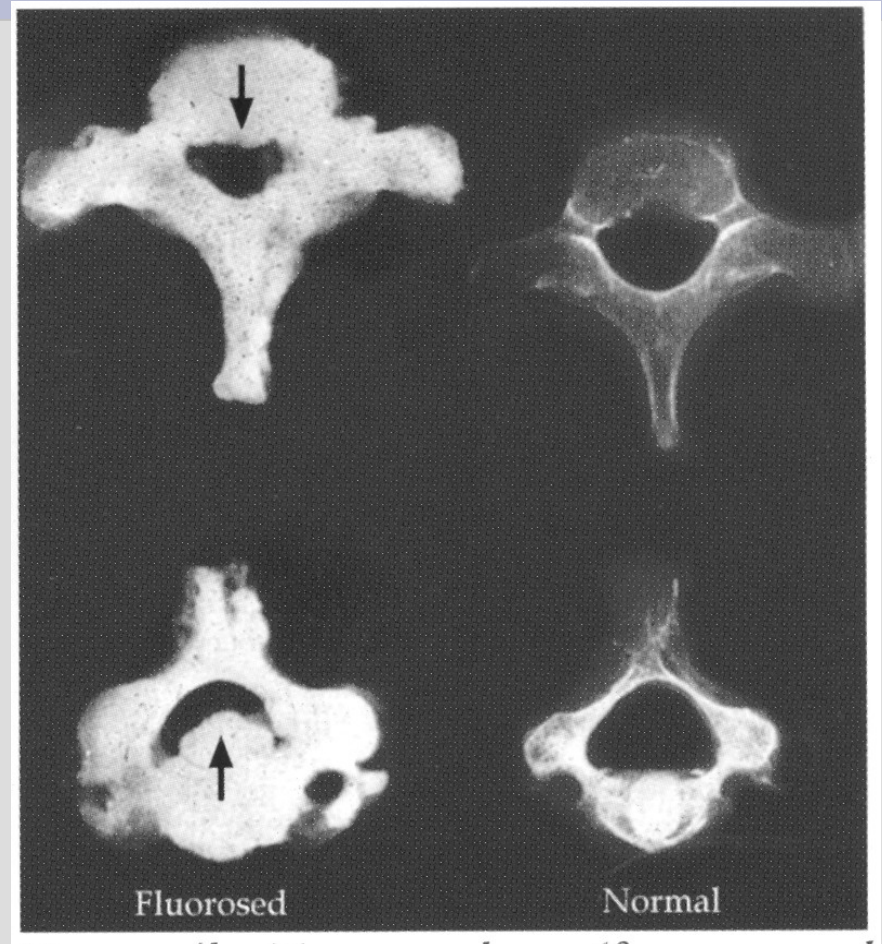
Forearm X-Ray is early biomarker of Skeletal Fluorosis

Journal of the International Society for Fluoride Research:
<http://www.fluorideresearch.org/forearm/files/forearm.pdf>

Skeletal Fluorosis in Spine

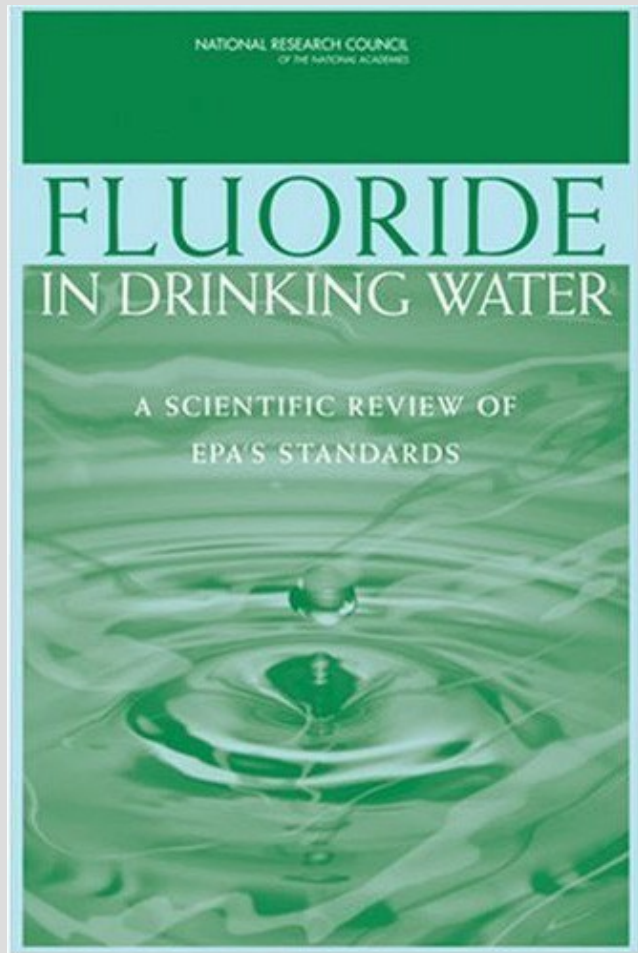


2 segments of vertebral column from human fluorosed and normal showing constriction of intervertebral foramen



2 vertebrae showing narrowing of vertebral canal and increase in size of body in fluorosed vertebrae

National Research Council 2006 REVIEW of 1,000 research papers on health effects – largest review ever conducted



Teeth – Chapter 4

Bones – Chapter 5

Reproductive & Developmental
Effects – Chapter 6

Brain, Nervous System – Chapter
7

Endocrine Function (Thyroid,
Parathyroid, Pineal Glands) –
Chapter 8

Gut, Kidney, Liver, Immune
System – Chapter 9

Cancer – Chapter 10

A Failure of Logic

**Controlled doses of
pharmaceutical grade fluoride**

NOT RECOMMENDED by Health
Canada.

*"Health Canada does not recommend
the use of fluoride supplements (drops
or tablets)."*



**Uncontrolled doses of
hazardous waste grade fluoride**

RECOMMENDED by Health
Canada.



Children SHOULD NOT USE Fluoridated Dental Products



WHY NOT?

Because they may SWALLOW IT.

Ont Min Health: “Use non-fluoridated toothpaste or no toothpaste for young children.” letter to MOH 2000

Health Canada: “...children **under age 3** should not use fluoridated toothpaste...”
Health Canada response to petition #221 #10

Health Canada: “Never give fluoridated mouthwash or mouth rinses to children **under six years of age**, as they may swallow it.” Fluorides and Human Health 2005

MORE Government Warnings Do Not Swallow!



*"If more than used for brushing is accidentally swallowed, get medical help or **contact a Poison Control Centre right away**".*

Health Canada fluoride-containing anti-caries monograph mandated for 2009

*"Keep out of reach of children under 6 years of age. If you swallow more than used for brushing, get medical help or **contact a Poison Control Center right away.**" US FDA label*

Another Failure of Logic

Don't Swallow!



**0.25mg Toothpaste
Grade Fluoride**

=

Swallow!



**0.25mg Hazardous
Waste Grade
Fluoride**

Pea-sized amount of toothpaste vs a glass of fluoridated water

Pea-sized amount of toothpaste = 0.25g F

Toothpaste fluoride concentration = 1,000ppm

1,000ppm = 1mg/g

pea-sized toothpaste = 0.25g x 1mg/g = 0.25mg Fluoride

1 glass of water = 0.25 liter

Water Fluoride concentration 0.8mg/L (Ont MOE)

1 glass (1/3 liter) of water = 0.33L x 0.8mg/L = 0.25mg Fluoride

Water Fluoride concentration 1.0mg/L (Health Canada)

1 glass (1/4 liter) of water = 0.25L x 1.0mg/L = 0.25mg Fluoride

Young Children should not swallow fluoridated water



American Dental Association

Centers for Disease Control

Academy of General Dentistry

Ontario Ministry of Health

*Scientific Committee of the Food Safety
Authority of Ireland (FSAI) 2001*

Ontario Ministry of Health **“Where baby formula is used, non-fluoridated water should be used for mixing.”**

American Dental Association says children should use water: **“purified, distilled, deionized, demineralized, or produced through reverse osmosis.”**

FSAI: **“that the precautionary principle should apply and recommends that infant formula should not be re-constituted with fluoridated tap water”**

FSAI: **“that infants below the age of 4 months are exposed to doses of fluoride that exceed the recognized safety based on an adverse effect defined as moderate dental fluorosis.”**

What are we putting into our drinking water? Where is it produced?

Hydrofluorosilicic Acid
arsenic, lead, mercury,
cadmium, radioactive
substances

Liquid scrubbing solution comes from
the **smoke stack emissions** of the
phosphate mining industry

Mandated air pollution control

- **This is not “natural” fluoride**

Is this a good deal for taxpayers?

Companies must **pay** \$7,000/ton for safe disposal
OR

Companies **receive** \$1,100/ton from cities (Hamilton
BOH Report)



Photo: www.fluoridealert.org

Endorsements on toothpaste: Who Benefits? Who is Responsible?

Dental organizations receive money for their endorsements.

Why do they endorse these yummy-flavoured toothpastes to be sold to young children?

Who is responsible for the thousands of “accidental” poisoning incidents reported every year:



- The young child who is incapable of spitting?
-
- The parent for allowing the child to use fluoridated toothpaste endorsed by dentists and PHS ?
-
- The dental organization promoting and endorsing the sale of these yummy-tasting toxic products?
-
- The PHS/Health Canada for ignoring the problem for decades?
-

York Review 2000

“Water fluoridation **has not been proved to reduce tooth decay**”

“The review **did not show water fluoridation to be safe.**”

“No drug would be licensed for effectiveness or safety on the present evidence.”

“There is a **dearth of “reliable” evidence with which to inform policy.**”

“We are concerned about the **continuing misinterpretations of the evidence** and think it is important that decision makers are aware of what the review really found.”

“**Department of Health's objectivity is questionable**—it funded the British Fluoridation Society and, along with many other supporters of fluoridation, **it used the York review's findings selectively to give an overoptimistic assessment of the evidence in favour of fluoridation.**”

‘York Review’ 2000 Chair Dr. Trevor Sheldon & Sir Iain Chalmers Advisor BMJ 2007
London Sunday Times, May 18, 2003

1979 Quebec Ministry of the Environment Review “Fluoride, Fluoridation & the Environment”

"Full-scale retrospective epidemiological studies whose scientific value has been demonstrated before the courts have revealed that there is a marked correlation between increased cancer mortality rates and the artificial fluoridation of public water supplies."

“On the other hand, it has not yet been established with any certainty that water with the recommended level of fluoridation is effective in preventing tooth decay.” p. 128-129

“We must recognize that in this respect we are witnessing the most extensive toxicological study ever made on the human race , and that this study is being carried out without the consent of the people involved.” p. 129

1999 Review

“In Canada, actual intakes are **larger than recommended** intakes for **formula-fed infants and those living in fluoridated communities**. Efforts are required to reduce intakes among the most vulnerable age group, children aged 7 months to 4 years. ”

“Current studies support the view that dental fluorosis has increased in both fluoridated and non-fluoridated communities. North American studies suggest rates of **20 to 75%** in the former and **12 to 45%** in the latter.”

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

2 years later...

“In the absence of comprehensive, high-quality evidence with respect to the benefits and risks of water fluoridation, the moral status of advocacy for this practice is, at best, indeterminate, and could perhaps be considered immoral.”

“Ethically, it cannot be argued that past benefits, by themselves, justify continuing the practice of fluoridation.”

Cohen H, Locker D. 2001 The Science and Ethics of Water Fluoridation Journal of the Canadian Dental Association. 67(10): 578-80.

Canadian Association of Physicians for the Environment (CAPE)

- "... we believe that fluoridation of drinking water is scientifically untenable, and should not be part of a public health initiative or program."

CAPE asserts:

- A) fluoridation is unlikely to be the cause of the cavity decline in Europe and North America,
- B) the potential for fluoride's adverse effects is real,
- C) current evidence of health harm points in the direction of caution.

**Why are you ignoring this
evidence?**

The Good News.

Fluoride may work topically.



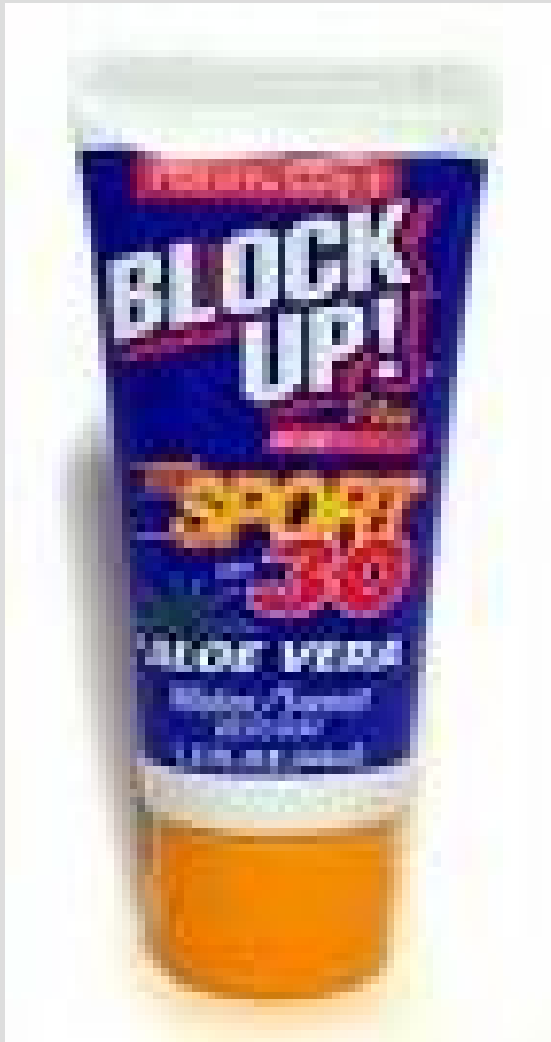
“The primary mechanism of action of fluoride to prevent dental decay is topical.” *1997 Canadian Consensus Conference Results*

Fluoride's predominant effect is posteruptive and topical." *US Centers for Disease Control, 2001*

“Its actions primarily are topical for both adults and children." *US Centers for Disease Control, 1999*

“Fluoride's caries-preventive properties initially were attributed to changes in enamel during tooth development because of...a belief that fluoride incorporated into enamel during tooth development would result in a more acid-resistant mineral. However, laboratory and epidemiologic research suggests that...its actions primarily are topical for both adults and children.” *Cover Story of JADA July 2000*

Drinking fluoride doesn't prevent cavities



This old hypothesis has now been rejected.

We don't drink sunscreen. We apply it to the surface of our skin.

Why?

Because sunscreen is toxic to swallow.

Because swallowing sunscreen doesn't work.

Point of Logic

It seems illogical to promote a policy that doesn't work.

It is illogical to spend **so much taxpayers' money** on something that doesn't work.

Do municipalities have better ways of spending **\$4/person/day, which do not include the capital costs of the fluoridation infrastructure.**

$$\text{\$4/day/person} \times 400,000 = \text{\$1.6million}$$

Calculations according to the Chief Dental Officer for Health Canada.

Drinking hydrofluorosilicic acid, arsenic, lead, uranium does not prevent cavities

Every \$1 of taxpayers money spent on water fluoridation

Is \$1 of wasted taxpayers money



Who are the real “experts”?

Municipal water operators are “experts” on water fluoridation systems.

Biologists specializing in aquatic species are “experts” on the impact of toxic substances on aquatic life.

Toxicologists who specialize in fluoride research are “experts” on fluoride toxicology of land animals.

Lawyers who understand the Fisheries Act, the Safe Drinking Water Act, the Clean Water Act, the Ontario Water Resources Act, Canadian Constitution, Precautionary Principle are “experts” on legal violations.

Medical doctors who know how to **diagnose and treat fluoride toxicity** are “experts” on health effects.

Dentists are “experts” on treating dental fluorosis and cavities. **Drill, Fill, Bill**

Clearly an interdisciplinary approach must be taken with such a complex issue.

Social Equity = Protecting the Vulnerable

There is no social equity when susceptible or vulnerable subpopulations are not protected from health harm.

Public Health Goals

Benefits should be maximized

Harm should be minimized or eliminated

**Let's stop using 20th century solutions
for 21st century problems**

No Benefits – Certain Harm



No benefits have been demonstrated.

Certain health harm is occurring.

Environmental harm is occurring.

Solutions are Simple

To minimize fluoride exposure and contamination to our environment

Stop adding it to our drinking water

To successfully treat fluorosis disease in early stages of disease:

Identify fluoride sources and eliminate

The Good News

We wish that all environmental and public health problems were so simple to solve.



Thank You!

QUESTIONS?

According to repeated nationwide surveys,

More Doctors Smoke **CAMELS** than any other cigarette!

Doctors in every
branch of medicine
were asked, "What
cigarette do you smoke?"
The brand named most
was Camel!

You'll enjoy Camels for the same reason
so many doctors enjoy them. Camels have
tast, and mildness, pack after pack, and
a flavor unmatched by any other cigarette.
Make this simple test: Smoke only
Camels for 30 days and see how well Camels
please your taste. How well they suit
your throat as your steady smoke. You'll
see how enjoyable a cigarette can be!

THE DOCTORS' CHOICE IS AMERICA'S CHOICE!



DR. J. H. HARRIS, M.D., "I smoke
Camels. They taste good, and
don't irritate my throat."

DR. H. H. HARRIS, M.D., "I smoke
Camels. They taste good, and
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DR. H. H. HARRIS, M.D., "I smoke
Camels. They taste good, and
don't irritate my throat."



For 30 days, test Camels in your "T-Zone" (T for Throat, T for Taste).

www.StrangeCosmos.com



Lead,
Asbestos,
Thalidomide,
Vioxx...

Municipalities are responsible for choosing and using Chemical Additives

Municipal governments must ensure that all chemicals and materials that come into contact with water within their drinking-water systems:

- **Ensure that products used are “safe and effective”**
- **Meet the applicable safety standards - ANSI/NSF Standard 60**
- **Adhere to all requirements of Safe Drinking Water Act**
- **Adhere to all requirements of the Clean Water Act**
- **Adhere to all requirements of the Ontario Water Resources Act**

Purposeful Misrepresentation

“Bait and Switch”

Bait: The public and the legislators are told by the PHS that “fluoride” will be used.

Switch: Water operators actually put in H_2SiF_6 , (or Na_2SiF_6 , NaF) with contaminants arsenic, lead, radioactive substances, simply because it is cheaper.

Switch:

- to a product that has never been tested for safety
- to a product that has never been approved by a government agency
- to a product that was never mentioned by promoters

Voters' legislative intent

- Voters assume that all applicable laws are being followed
- Voters assume that the product is safe – causes no harm to anyone at the recommended doses when swallowed
- Voters assume that the product is effective – reduces cavities when swallowed
- Voters assume that the product put on their ballot question is the product put into their drinking water.

PHS/Health Canada

Cannot mandate the use of **CWF chemicals**

Does not regulate **CWF chemicals**

Does not set any safety standards for **CWF chemicals**

Does not accept responsibility for the actual **CWF chemicals**

YET

Promote and support the **policy of CWF**

Provide promotional “**opinions**”

Worker Safety

City of Hamilton Board of Health July 9, 2008

“Hydrofluosilic Acid (HFS) is an extremely hazardous chemical and poses significant health and safety risk to City’s staff.”

Canadian Charter of Rights and Freedoms

EQUALITY RIGHTS

15. (1) Every individual is equal before and under the law and has the right to the **equal protection and equal benefit of the law** without discrimination and, in particular, without discrimination based on race, national or ethnic origin, colour, religion, sex, age or mental or physical disability.

SDWA: Dilution no Defence

Section 20 (1): (1) No person shall cause or permit any thing to enter a drinking-water system if it could result in,

- (a) a drinking-water health hazard;**
- (b) a contravention of a prescribed standard;**

Section 20 (3): Dilution no defence

For the purposes of prosecuting the offence of contravening subsection (1), it is not necessary to prove that the thing, if it was diluted when or after it entered the system, continued to result in or could have resulted in a drinking-water health hazard.

Medicine Act 1991

Advertising Regulations, Ontario Regulation 114/94, Part II, Section 6(2).

“Information communicated under subsection (1) must not, be **false, misleading or deceptive by the inclusion or omission of any information**; contain a testimonial or any comparative or superlative statements; or contain any reference to a specific drug...”

Canadian Dental Association Code of Ethics

"Dentists shall not represent their education, qualifications or competence in any way that would be **false or misleading.**"_

Interpretation:

Dentists do not have authority to give advice outside of the field of dentistry.