

Fluoridation: Advice versus Responsibility

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Fluoridation is not ethical

1. No government has the right to force medication on its people.
2. It deprives individuals of their right to “informed consent to medication.”
3. A local government (usually with no medical qualifications) is doing to EVERYONE what a doctor can do to NO ONE.
4. Who has responsibility for any harm caused?

Advice versus Responsibility

Health Canada, the Ontario Dental Association, and other professional bodies **RECOMMEND** that fluoride be added to the water – but they do not have – or accept - any legal responsibility in the matter – **that responsibility falls on the local council that sanctions the practice.**

Responsibility

To accept responsibility in this matter the Council would have to have **super confidence** that swallowing fluoride a) actually did some good and b) **caused no harm to any one in the community** – even though the Council has little or no control over this unusual form of medication

No control

Once fluoride has been put in the water the council has no control over the dose people get

And no control over who gets it

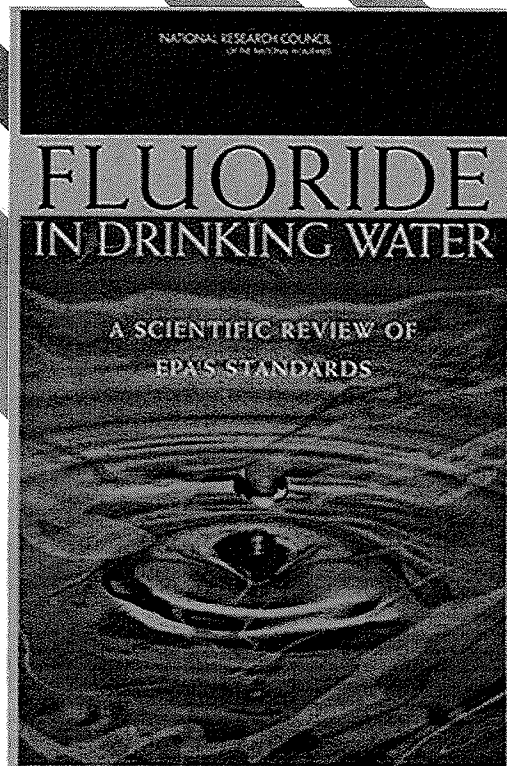
It goes to the very young, the very old, those who are sick, those who have poor kidney function and those who have poor nutrition

It does no good to swallow fluoride

Not one single process in the human body has ever been demonstrated to need fluoride. It is not an essential nutrient. If fluoride helps to fight tooth decay it does so by TOPICAL action on the surface of the enamel – not from inside the body (CDC, 1999, 2001). On the other hand...

Many biological processes can be harmed by fluoride.

Given a sufficient dose fluoride causes a whole range of harm – this has been demonstrated in countries that have high levels of fluoride in their water. See the massive 507-page report of the U.S. National Research Council review “Fluoride in Drinking Water: A Review of EPA’s standards” published in 2006.



National Research Council (2006)

Subsets of the population may be harmed

Chapter 2 indicates that subsets of the population drinking fluoridated water are exceeding EPA's safe reference dose. There is no adequate margin of safety to protect everyone drinking fluoridated water.

Remember, bottle-fed babies in a fluoridated community get between 100 and 200 times more fluoride than breast-fed babies.

Canadian health authorities are not doing their job on this issue.

There have been practically **NO HEALTH STUDIES** carried out in Canada—

There has been **NO MONITORING** of side effects —

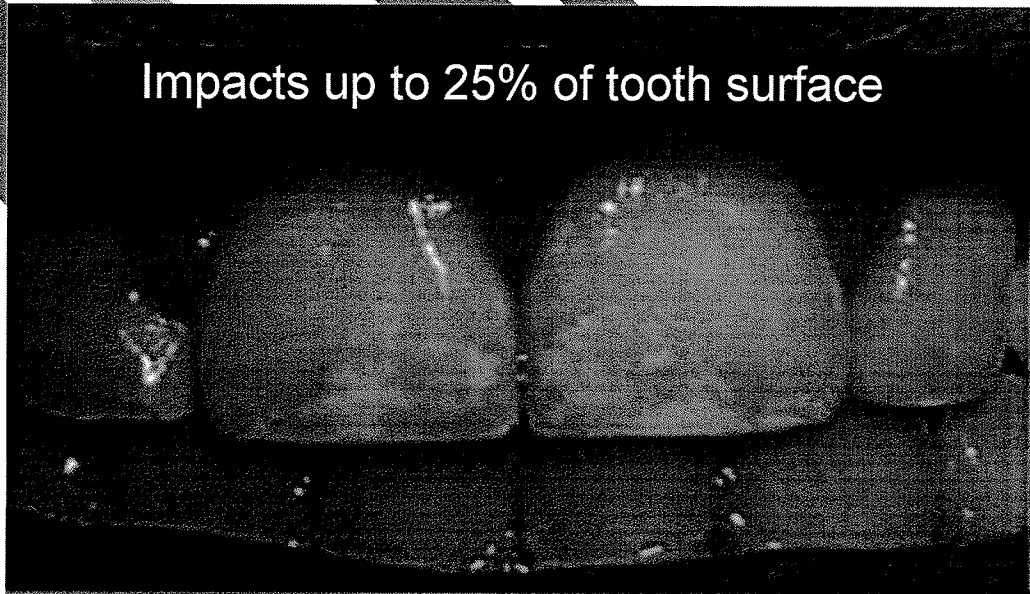
There has been no systematic monitoring of the levels of fluoride being reached in citizens' bones.

One harm not denied

Over-exposure to fluoride before the permanent teeth have erupted causes dental fluorosis (DF).

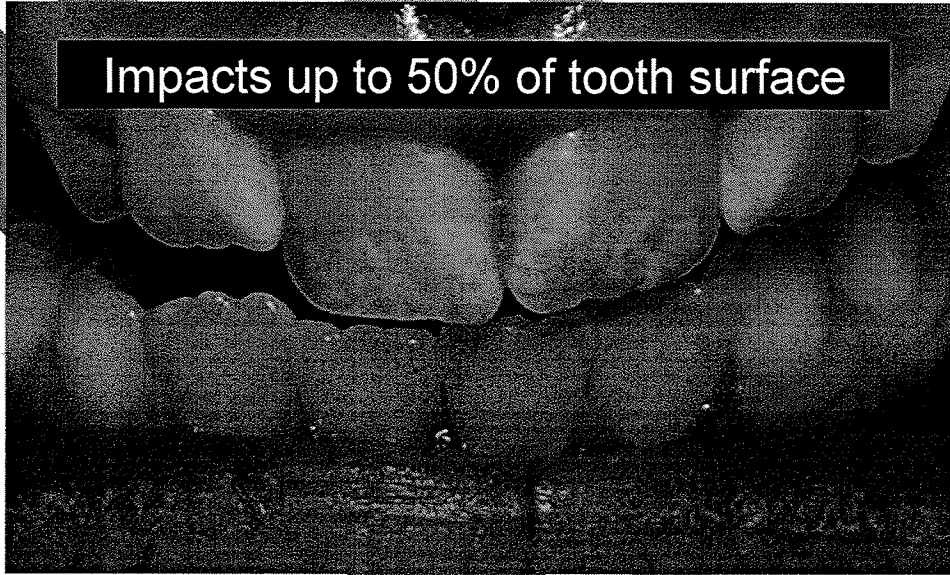
Original proponents thought DF could be limited to 10% of kids in its very mild form

Impacts up to 25% of tooth surface



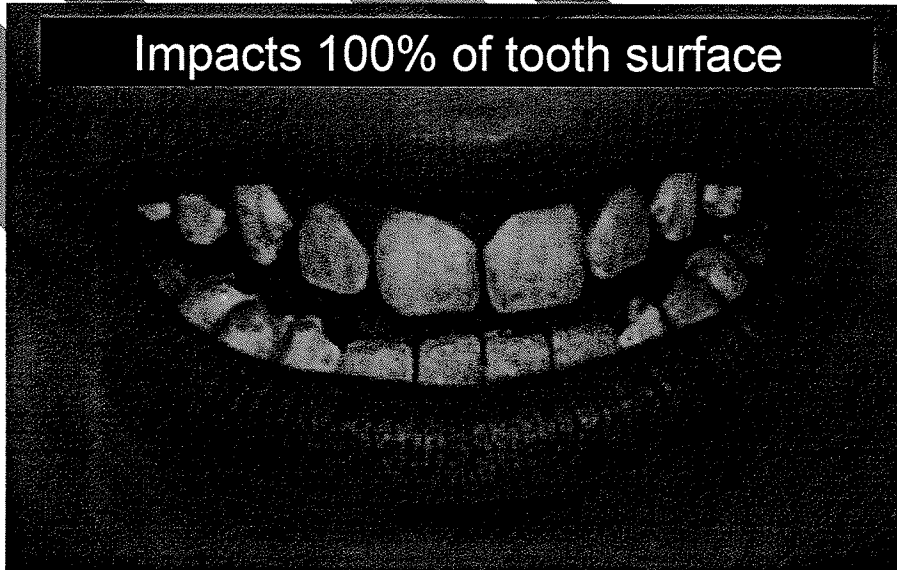
Very Mild Dental Fluorosis

Impacts up to 50% of tooth surface



Mild Dental Fluorosis

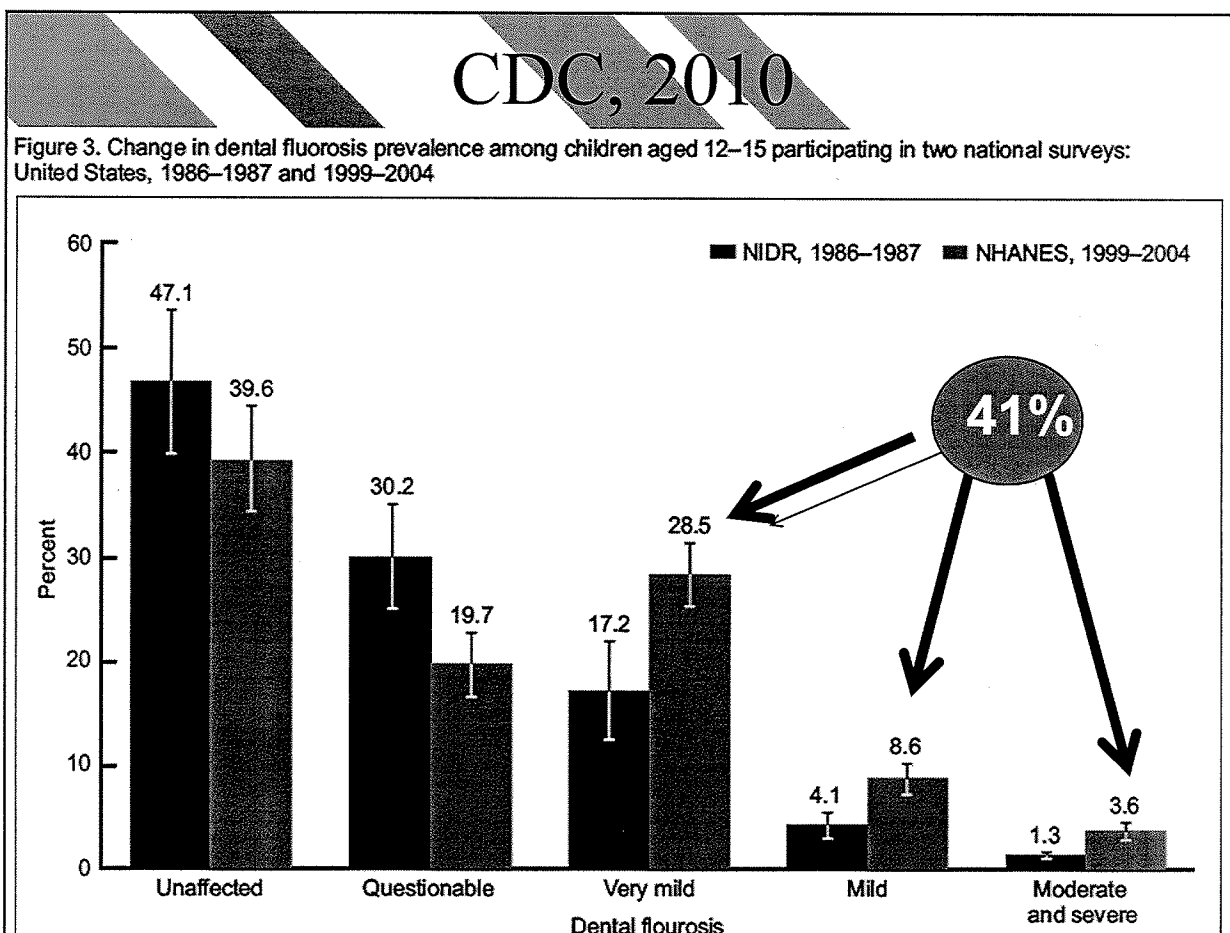
Impacts 100% of tooth surface



Moderate – Severe Dental Fluorosis

CDC (2010)

In 2010, the CDC reported that 41% of American kids between the ages of 12-15 had dental fluorosis –i.e. are over-exposed to fluoride!



A reckless assumption

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

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

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

Instead of science we are getting politics from Canadian dental and health "authorities."

Dr. Peter Cooney

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

Health Canada: Politics Not Science

In 2008 Health Canada picked a panel of six experts to review the literature. 4 of these 6 experts were dentists known to be pro-fluoridation.

Who at Health Canada orchestrated this biased selection?

Health Canada superficial

When Health Canada published a draft of their review in 2009 it was **superficial**. For example they only looked at **5 of 23** published studies showing an association between moderate exposure to fluoride and lowered IQ.

Health Canada ignores scientific input

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

**Health Canada is protecting a policy
not the public**

**For some reason Health Canada
feels obliged to continue to
support this practice regardless
of what harm it may be causing.**

Medical Officers of Health

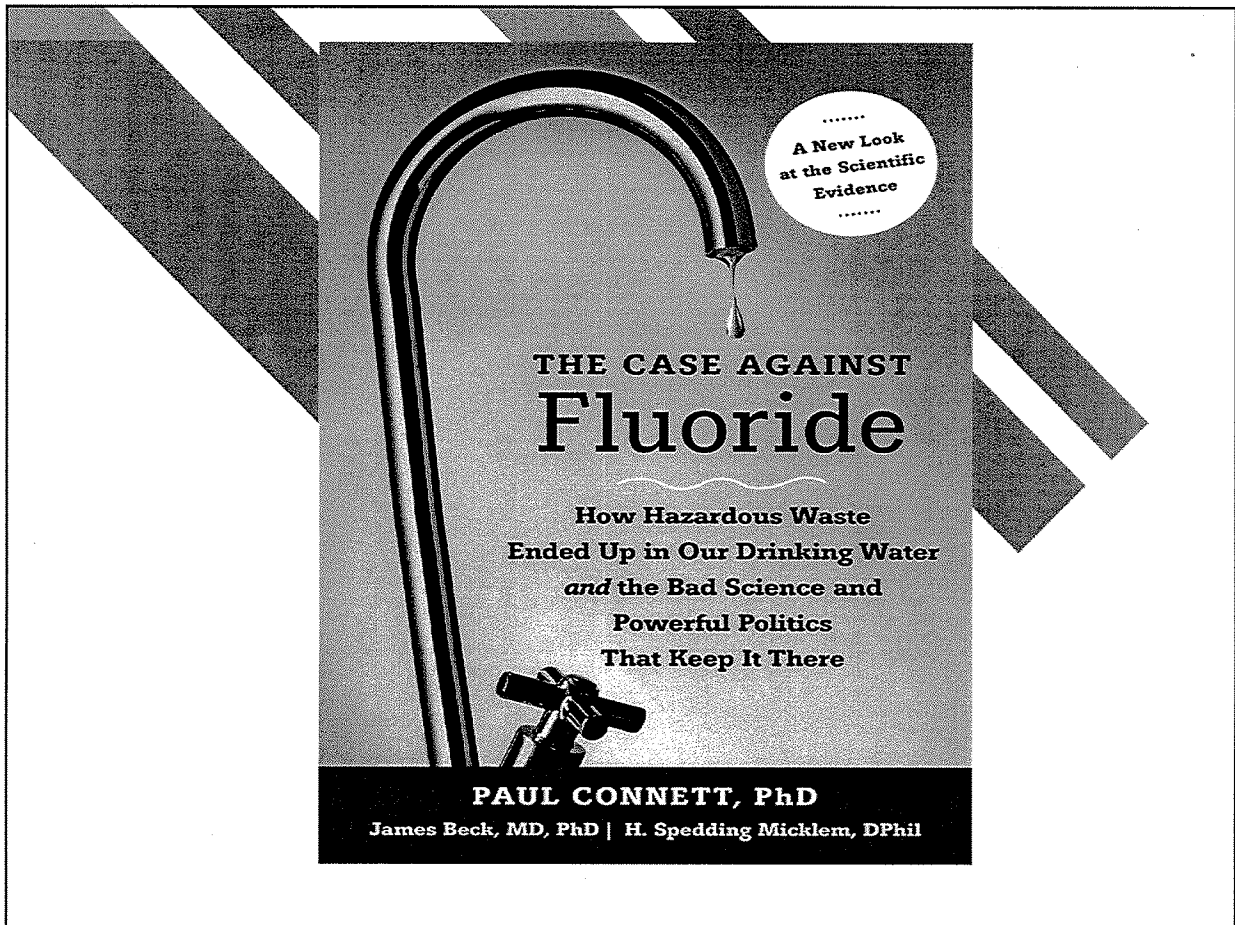
**Sadly, throughout Canada local
Medical Officers of Health feel
obliged to support Health
Canada on fluoridation.**

Medical Officers of Health

MOHs do not see their job as carefully and scientifically reviewing the literature on this issue but merely as a link in the chain of a public health policy determined by those above them in the chain of command.

If I am wrong...

If I am wrong in this interpretation of events, let any MOH (or all combined) produce a scientific response to the book authored by myself and two other scientists...



As scientists we have done our job!

- We have outlined our case in detail
- We have documented every fact and argument in 80 pages of references
- Now we need health officials, health agencies and professional bodies to
- Use the best science to dismiss our case or
- admit that fluoridation was a **HUGE MISTAKE** and **STOP IT NOW!**

Advice versus Responsibility

- **Advice** from bodies that take no responsibility for the practice is worthless.
- London Council has to take full **responsibility** for the consequences of putting a known highly toxic substance (and a contaminated industrial grade product to boot) into the drinking water.

London Council

- Does the London Council have the confidence to take **full responsibility** for the consequences of doing this?
- If not then they should stop this outdated practice immediately.

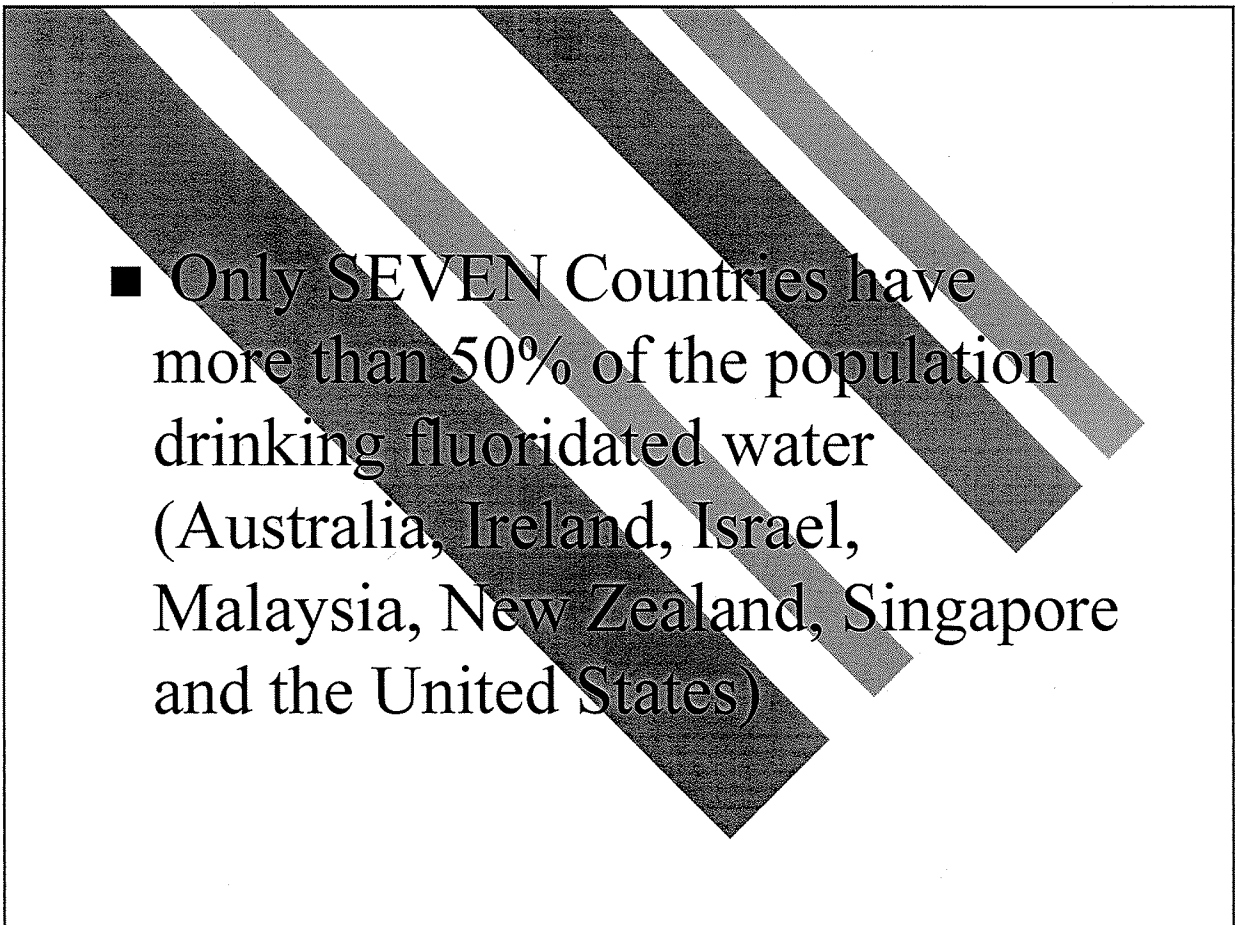
London Council

- If the London Council has that confidence, on what is it based?
- Is the council relying on some other body to tell you them it is OK?
- Does the council believe that any other body will relieve it of any legal responsibility if any harm is caused?

EXTRA SLIDES



Part 1.
The evidence of benefit
is very weak

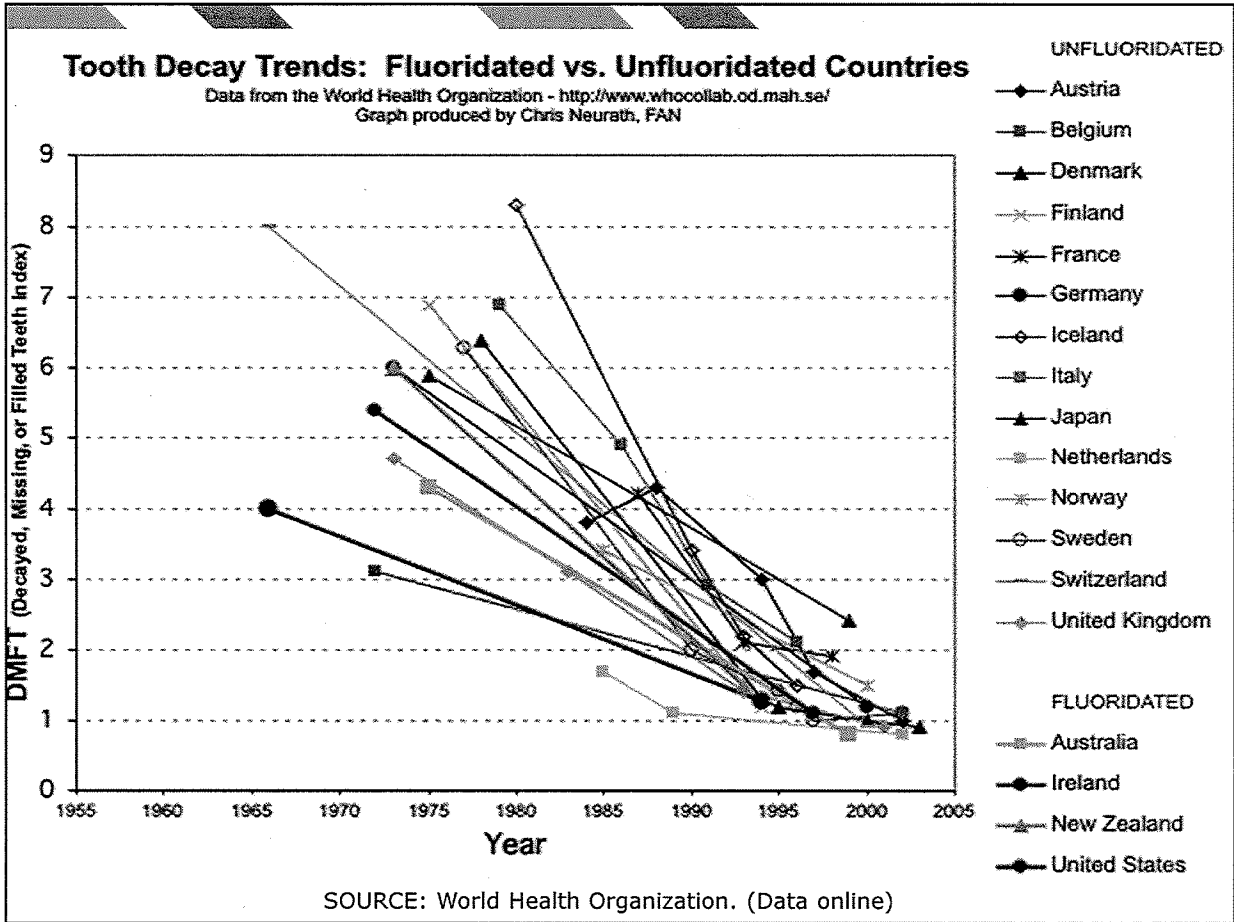
- 
- Only SEVEN Countries have more than 50% of the population drinking fluoridated water (Australia, Ireland, Israel, Malaysia, New Zealand, Singapore and the United States)

Austria*
Belgium
Denmark
Finland
France*
Germany*
Greece
Iceland

Italy
Luxembourg
Netherlands
Northern Ireland
Norway
Scotland
Sweden
Switzerland*

*Some fluoridate their salt

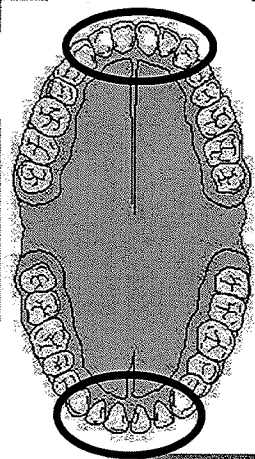
According to WHO data
tooth decay in 12-year-olds
is coming down as fast
in F as NF countries



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

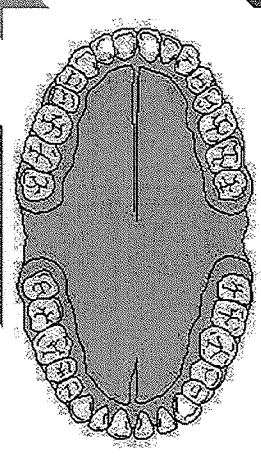
- The teeth of over 39,000 children in 84 communities were examined (Brunelle & Carlos, 1990).
- They measured tooth decay as DECAyed, MISSING and FILLED SURFACES (DMFS)

Decayed Missing and Filled surfaces (DMFS)



**There are 4 surfaces to the top six and bottom six cutting teeth and 5 surfaces on all the other teeth.
128 tooth surfaces in all.**

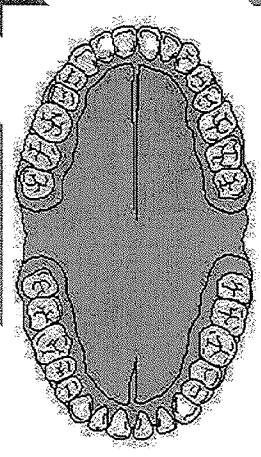
Decayed Missing and Filled surfaces (DMFS)



2.8
DMFS
F

There are 4 surfaces to the top six and bottom six cutting teeth and 5 surfaces on all the other teeth.
128 tooth surfaces in all.

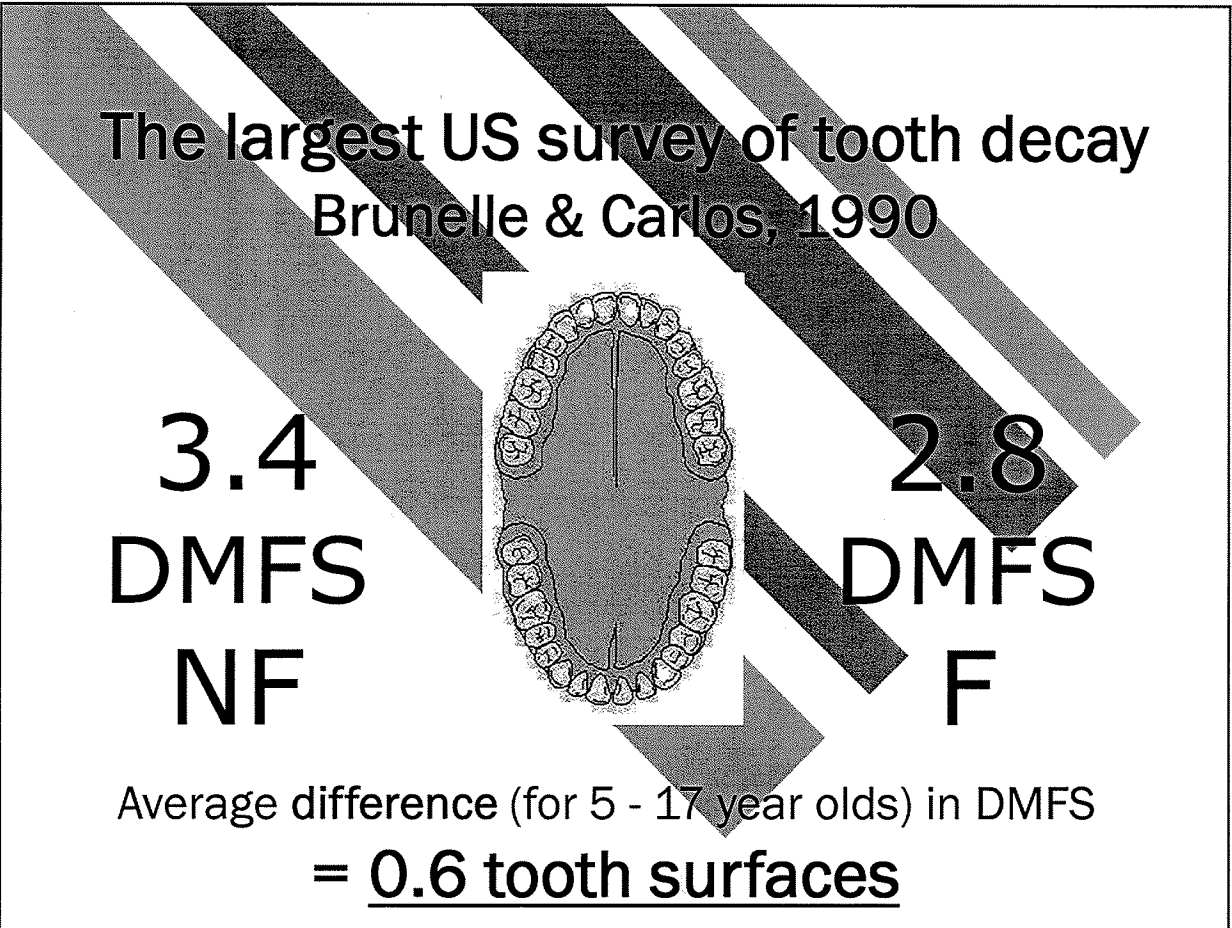
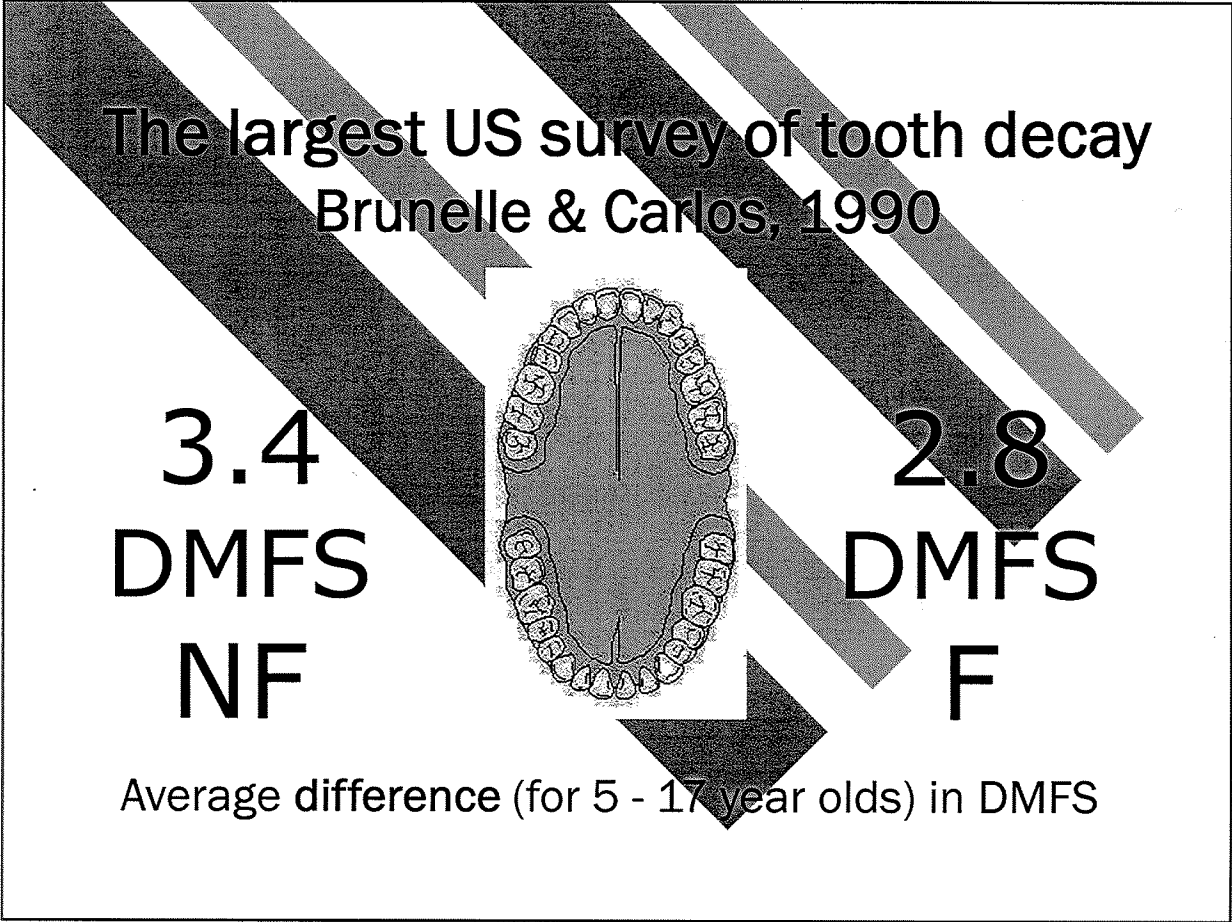
Decayed Missing and Filled surfaces (DMFS)



3.4
DMFS
NF

2.8
DMFS
F

There are 4 surfaces to the top six and bottom six cutting teeth and 5 surfaces on all the other teeth.
128 tooth surfaces in all.



Studies in Australia have found even less saving than 0.6 DMFS!

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

Important recent studies

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

An explanation for weak evidence of benefit in recent studies

The major benefits of fluoride are TOPICAL not SYSTEMIC. (CDC, 1999, 2001). In other words fluoride works on the outside surface of the tooth not from inside the body

Fluoridation should have ended in 1999!

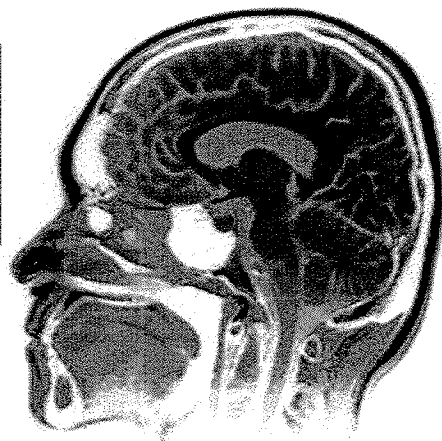


“In pharmacology, if the effect is local (topical), it's awkward to use it in any other way than as a local treatment. I mean this is obvious. You have the teeth there, they're available for you, why drink the stuff?”

-Dr. ARVID CARLSSON,
NOBEL LAUREATE in MEDICINE 2000

Part 2.
Fluoride and the Brain

National Research Council (2006):
Fluoride & the Brain



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

Fluoride and the Brain

Many more studies on the brain have been published since the NRC review

The panel reviewed FIVE IQ studies

Human studies

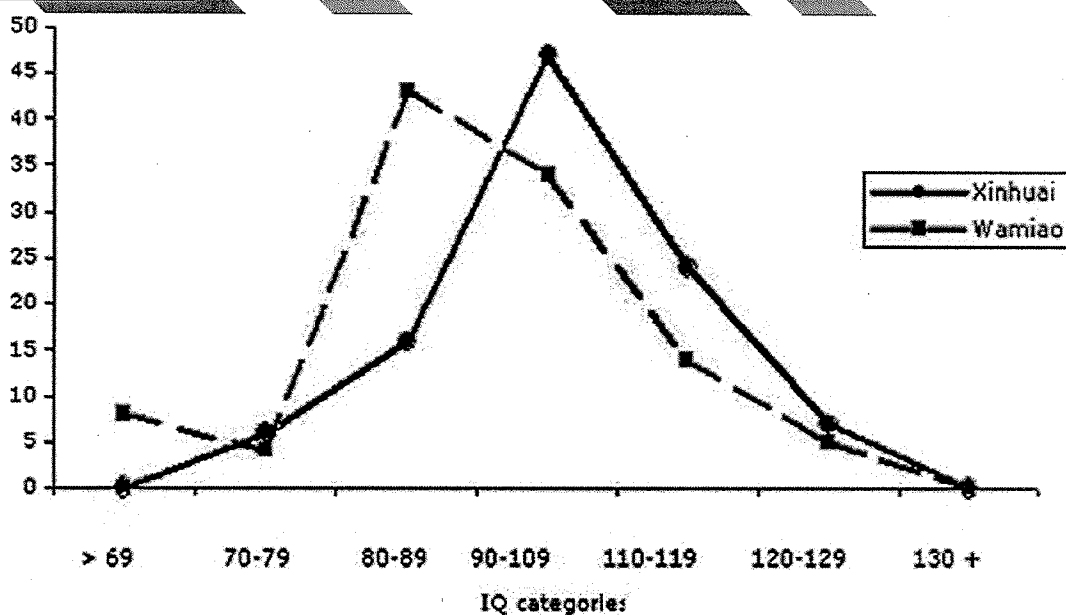
- As of 2011, there are now 25 published studies (from China, Iran, India and Mexico) indicating that moderate to high fluoride exposure is associated with lowered IQ in children

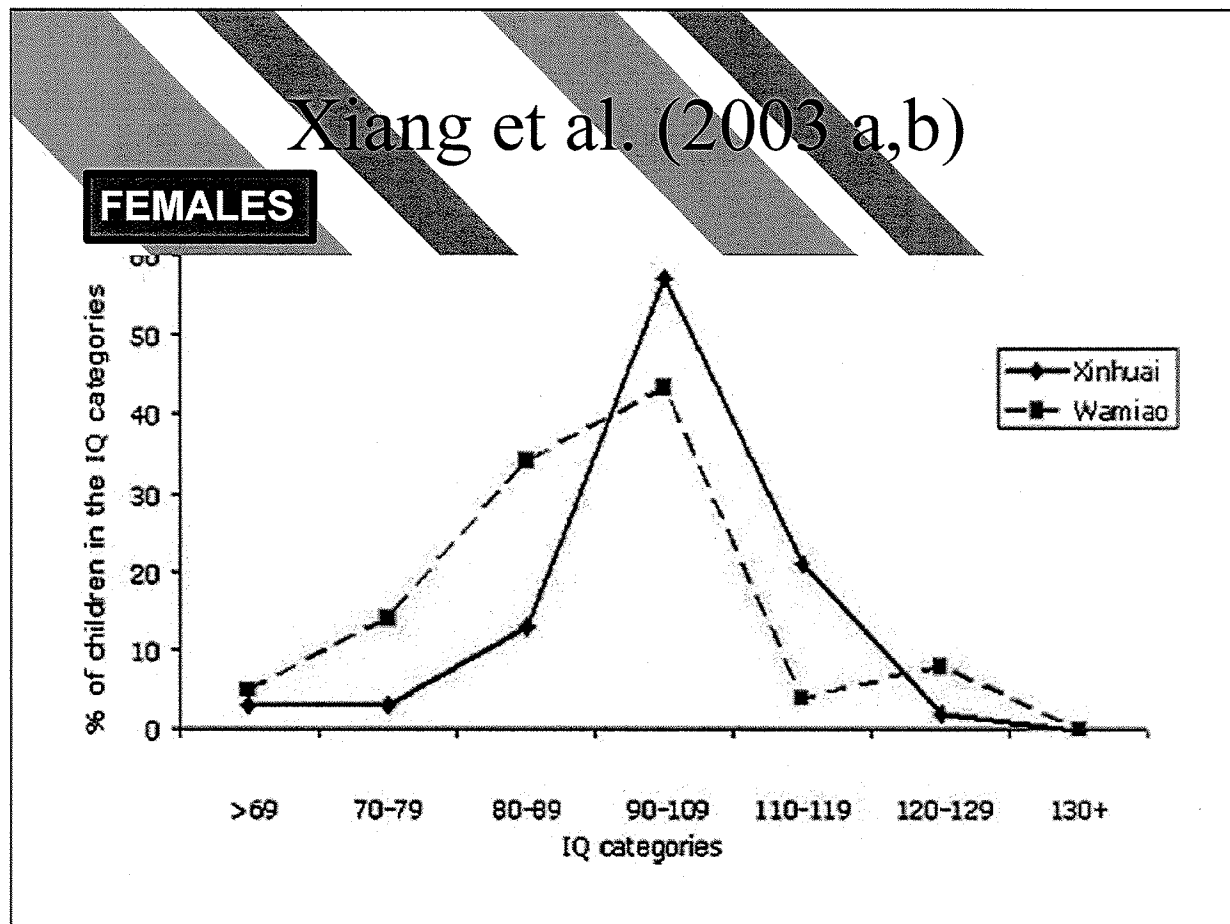
Xiang et al. (2003 a,b)

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

Xiang et al. (2003 a,b)

MALES





- Xiang et al. (2003 a,b)
- Estimated that IQ in children lowered at
 - 1.9 ppm fluoride in water (threshold)

There is no adequate margin of safety

- If fluoride is associated with lowering IQ of children at 1.9 ppm in a small population study we need to apply a safety factor to protect the whole population of children
- Normally we use a safety factor of 10 to do this
- If we assume that the Chinese children were drinking one liter of fluoride per day the dose that lowered IQ was 1.9 mg/day
- That would mean to protect the intelligence of ALL the children in a large population a safe dose would be 0.19 mg/day (1.9 divided by 10)

Ding et al. 2011 (J. Hazardous Materials)

- “Mean value of fluoride in drinking water was 1.31 ± 1.05 mg/L (range 0.24–2.84).”
- **“Conclusions**
- Overall, our study suggested that low levels of fluoride exposure in drinking water had negative effects on children’s intelligence...
- The results also confirmed the dose–response relationships between urine fluoride concentrations and IQ scores...”

Ding et al. 2011

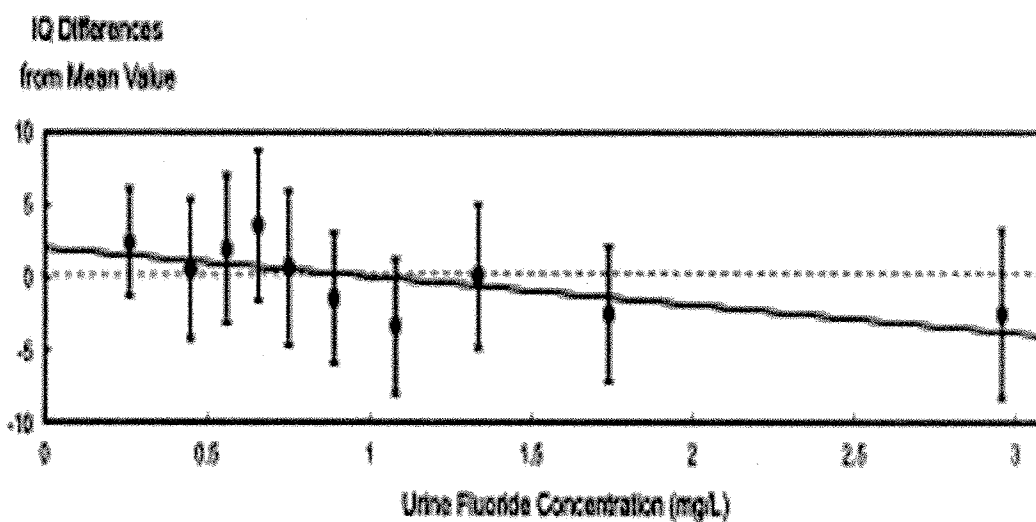


Fig 2. The relationship between IQ differences and urine fluoride concentrations. Multiple linear regression model was carried out to confirm the association with urine fluoride exposure and IQ scores ($F=9.85$, $p < 0.0001$)

Ding et al. 2011

- “an increase in the urine fluoride concentration of 1 mg/L associated with a decrease of 0.59 IQ scores.”

Two preposterous notions

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

Other health concerns
(see chapters 13-19 in *The Case
Against Fluoride*)

Fluoride may cause bone cancer (osteosarcoma)

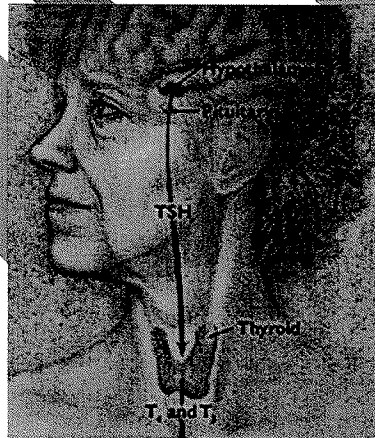
Osteosarcoma: Science vs Politics

- The science: In 2001, Dr. Elise Bassin (a dentist) successfully defended her PhD thesis at Harvard.
- She found (in a matched case-control study) that if young boys were exposed to fluoridated water in their 6th, 7th or 8th years, they had a 5-7 fold increase in developing osteosarcoma by the age of 20, compared to non-exposed boys.
- Now the politics
- Between 2001 and 2005, Bassin's thesis adviser - Prof. Chester Douglass three times concealed her findings (1. From his peers - a meeting of the BFS in 2002; 2. The NRC panel and 3. His funder - the National Institutes of Health (NIH).

Osteosarcoma

- **The Science:** Bassin publishes research in the May 2006 issue of the journal *Cancer Causes and Control*.
- **The politics again.** In a letter published in the same issue, Douglass promises a study that he claims will discount Bassin's findings.
- This promise of a study is being used by promoters of fluoridation to negate concern over Bassin's findings.
- Douglass promised his study for the Summer of 2006 –
- It was finally published in August 2011 (Kim et al, 2011), but
- **it did NOT refute Bassin's findings!**

National Research Council (2006): Fluoride & the Thyroid



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

IF fluoride lowers thyroid function

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

Fluoride & Pineal Gland

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

Schlesinger et al.
(1956)

Newburgh-Kingston
caries-fluorine study:
final report

Herman E. Hilleboe, M. D., M.P.H., Edward R. Schlesinger, M.D., M.P.H., Helen C. Chase, M.Sc., Katherine T. Caniswell, B.A., David B. Ast, D.D.S., M.P.H., David J. Smith, D.D.S., Barnet Wachs, D.D.S., Albany, N. Y.; David E. Overton, M.D., M.P.H., Riverhead, L. I., N. Y., and Harold C. Hodge, Ph.D., Rochester, N. Y.

Presented as a symposium at the New York Institute of Clinical Oral Pathology, Inc., New York, December 12, 1955.

Reprinted from
Volume 52
Pages 290-325
March 1956

THE JOURNAL OF THE AMERICAN DENTAL ASSOCIATION

302 •

Table 5 • Menstruation in girls

Age to nearest birthday (years)	Newburgh		Kingston	
	Present	Absent	Present	Absent
7	—	36	—	10
8	—	30	—	25
9	—	35	—	24
10	—	9	—	16
11	2	24	3	12
12	8	14	5	12
13	16	5	15	4
14	14	3	8	4
15	11	—	7	—
16	11	—	14	—
17	11	—	9	—
18	4	—	4	—

Mean age at onset of menstruation: Newburgh, 12 years 0 months; Kingston, 12 years 5 months.
Per cent of girls past menarche: Newburgh, 35.2; Kingston, 35.0. (Per cent adjusted to age distribution in Kingston.)

Fluoride and Children's Bone

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

Alarcon-Herrera et al. (2001)

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

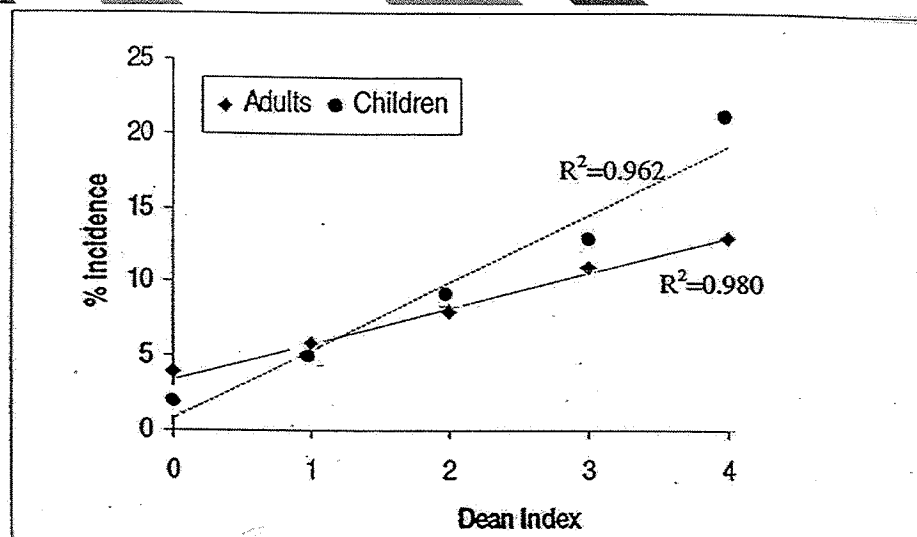
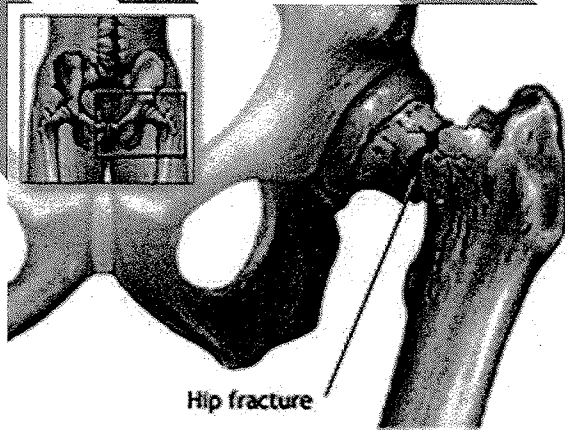


Figure 4. Incidence of bone fractures plotted against the severity of dental fluorosis (Dean's Index) for children and adults in the Guadiana Valley in the state of Durango in Mexico (from Alarcon-Herrera et al, 2001).

Arthritis

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

National Research Council (2006): Fluoride & Skeletal System



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

Li et al (2001)

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

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

- Key Health Studies have NOT been done in most fluoridating countries**
- NO INVESTIGATION of a possible relationship between consumption of fluoridated water and**
- lowered IQ in children (except one small study in NZ),
 - behavioral changes in children (attention deficit etc)
 - arthritic symptoms in adults,
 - hypo-thyroidism (underactive thyroid),
 - increased bone fractures in children,
 - Melatonin levels in children
 - Earlier onset of puberty,
 - Alzheimer's disease in adults, and

Part 3.
Why do health bureaucracies and professional bodies continue to promote fluoridation?

We have to do look at this at three levels:

- At the bottom
- In the middle
- At the top of the bureaucracies (or chains of command)

At the bottom of the chain of command

- We have thousands of doctors and dentists who truly BELIEVE that fluoridation works. This was all they were taught at dental and medical school. Now most are so busy treating patients that they don't have time to read the literature. They take the word of professional bodies and health agencies at face value.

American Dental Association White Paper – 1979 On Fluoridation

Excerpt, Pg. 10-11

"Individual dentists must be convinced that they need not be familiar with scientific reports of laboratory and field investigations on fluoridation to be effective participants in the promotion program and that nonparticipation is overt neglect of professional responsibility."

In the middle of the chain of command

- Within the chain of command we have bureaucrats who are trained to PROMOTE NOT to QUESTION policy (i.e. their jobs depend upon promoting fluoridation)

At the top of the chain of command

- At the top of the chain of command of the health agencies in fluoridating countries the major concern is (in my opinion):
- Losing credibility

Why do health agencies continue to promote fluoridation?

- Lose fluoridation = lose credibility
- Lose credibility = lose the public's trust in other important public health policies
- Public health policies require the public's trust

MY RESPONSE

- I argue that by coming clean and stopping their support for fluoridation (switching to promoting TOPICAL treatments and investing in education for a better diet) health agencies would improve their credibility and begin to regain the public's trust.