THE CASE AGAINST FLUORIDATION

The amount of information and research on fluoridation is vast
This is a summary only

It has long been known that excessive fluoride intake carries serious toxic effects. But scientists are now debating whether fluoride confers any benefit at all.
- UNICEF

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

EXECUTIVE SUMMARY

The Ministry of Health has renewed efforts to fluoridate the water supplies of NZ in spite of not only general opposition but also of insurmountable evidence of adverse health effects, which the MoH deliberately ignores, and the absence of any evidence of significant impact on tooth decay or social equity, as found by the "York Review" in 2000. The MoH also ignores this report, the most comprehensive review of epidemiological studies in history, based on a "critique" they commissioned from a local pro-fluoridationist, presumably for this express purpose.

In fact the MoH conducts no research on the accumulation of fluoride in the bones of NZ'ers, or any other long term adverse health effects, and no equivalent studies have been conducted overseas, yet the MoH state they rely exclusively on overseas studies. Although there are many independent studies showing adverse health effects published in international peer reviewed journals, the MoH refuses to acknowledge these, branding the bona fide researchers as "anti-fluoridationists" and therefore not to be listened to. In other words the MoH will only listen to pro-fluoridationists.

In spite of being stacked to find in favour of fluoridation the York Review, commissioned by the British government, found:

- No significant benefits from water fluoridation
- No proof of human health safety, and in fact serious concerns about safety
- No proof of social equity from water fluoridation

In fact fluoridation has been rejected throughout continental Europe and is only practiced by countries traditionally under the political influence of the US or UK.

No safety testing of fluoridation agents

On 25 April 2002 The US Environmental Protection Agency acknowledged that no human health studies had ever been conducted on Silicofluorides, used universally for water fluoridation in New Zealand.

Demonstrated harmful effects

Whether fluoridation benefits teeth or not, proven harmful effects would make it illegal under current legislation.

Internationally published peer reviewed research has shown the following harmful effects:

Central Nervous System Damage: The most damage is done at the time of birth resulting in either hyperactivity (ADD type symptoms) or lethargy and malaise, depending on the timing of exposure

Soft Tissue accumulation: This was known as early as 1957, but the most definitive study was in 1999, followed up in 2001, showing accumulation in the Pineal gland at levels up to 22,000 ppm.

Aluminium-Fluoride complexes. These have been shown to cause disruption to G-protein functioning resulting in uncontrolled cell triggering. One such G-protein is present in 50% of human cancers. Aluminium-Fluoride complexes also produce effects in the brain of the type found in Alzheimer's dementia.

Hip Fractures. 50% of fluoride accumulates in the body, mainly the bones, making them denser but more brittle. Studies indicate a link with hip fracture but are as yet not conclusive.

Increased Lead Uptake

Silicofluorides specifically, as used universally in NZ, have been shown to increase the uptake of dietary lead, such as from the exposed solder joints of budget brands of canned food.

Nursing infants.

New born infants are highly susceptible to fluoride harm if bottle fed. A breast feeding infant is naturally protected: mothers milk contains only 0.016 ppm fluoride regardless of the mother's exposure – a natural protection. A baby drinking formula made with fluoridated water however, receives approximately 50-80 times this level, (depending on fluoridation levels) and will drink 2-4 times more "formula" than breast milk.

This is equivalent to an adult drinking water at between 6 and 11 ppm, well within the acknowledged toxic range. The NHMRC Review specifically recommended fluoridated water not be used for infant formula in 1999, for this reason, as did the Food Safety Authority of Ireland (FSAI) Scientific Committee and the US Academy of General Dentistry.

Allergic persons

Just as there are persons allergic to many common substances such as aspirin or penicillin there are also persons in the community allergic or hypersensitive to fluoride who suffer a range of health detriments ranging from mild gastrointestinal problems, through damage to the retina, muscular spasms, skin problems, to chronic fatigue type syndrome and in rare cases death. The Public Health Commission in their 1995 report identified that such people existed and recommended to the Minister of Health that measures be implemented to detect, assess, and safeguard these people; the Ministry has done nothing!!!

Claimed Benefits

The sole purpose of fluoridation is to reduce tooth decay.

It was originally maintained that the benefit of fluoride was obtained by ingestion, getting into the tooth enamel via the bloodstream. This was accepted by the Commission of Inquiry into Fluoridation in 1956 and is the underlying justification for fluoridation. In fact it is now accepted that any benefit is topical, not systemic. That is, fluoride is absorbed into the tooth enamel by direct surface contact. Whether this confers any benefit is another question, but it destroys the entire basis of water fluoridation.

All the early studies, including the "Hastings experiment", claiming 60% improvement have been have since been discredited. The absence of clinically significant benefits has been shown by the largest study in history in the US, conducted by the National Institute for Dental Research in 1990 on 12 year olds, and an Australian study in 1996 based on a lifetime of exposure.

In fact the early Maori population would have had rampant decay if this was due to fluoride deficiency. However, only 1:2,000 teeth (0.05%) showed any decay in hundreds of skulls examined in the 1930' s b Dr. Weston Price, a Past President of the American Dental Association.

The "recommended dose" is already met or exceeded without water fluoridation.

The dose recommended by proponents is 1 mg per day, yet we were already ingesting this amount in 1992 as acknowledged by the Public Health Commission in their 1994 report. At the levels stated (1.8 mg/day upwards) we should have removed fluoridation completely yet only reduced it to 0.7 ppm, subjecting NZers to more than the "recommended daily intake": the reason for this has never been explained.

Alleged Promotion of Social Equity in Dental Health

One claim made for water fluoridation is that it ensures the socially underprivileged, who cannot afford or will not undertake proper dental care, will be protected along with more privileged members of society.

The "York" Report, examining all available epidemiological studies, found "no evidence to support the social equity theory".

The identified "at risk" groups in the Wellington area for example (Maori, Pacific Island, low socio-economic) in fact live predominantly in fluoridated areas: fluoridation has clearly not promoted social equity in Wellington..

In fact the underprivileged are those most susceptible to harm from fluoridation. Adverse health effects on poorly nourished persons, especially those suffering from Calcium or Phosphorus deficiency in their diet.

Decay is caused primarily by sugar in food and drink: it is the underprivileged especially who tend to consume more such drink especially than others, exacerbating the problem.

Environmental Issues.

The fluoride used is not pharmaceutical or even food grade; it is industrial waste containing significant amounts of lead, arsenic, mercury, cadmium, and sometimes radium. This is not only harmful to humans, but most of it is dumped directly into the environment: NZ buys toxic waste from other countries, waste which cannot by law be discharged into the atmosphere or dumped in toxic waste dumps (it is too toxic and too soluble) and dumps it into our clean green environment, not just for free, but we pay them for the privilege!!!

One supplier' s Safety Data Sheet for Hexafluorosilicic Acid states:

"DO NOT let this chemical enter the environment. Dispose of this product as hazardous waste. Consult the supplier to see if he will take it back. Readily filters into soil. Recover cleaning water and dispose of at a specialist site."

Medical Ethics and Civil Rights

The ethical issues raised by fluoridation are ultimately grounded in the Nuremberg Code. This code established the basis for all modern medical research and treatment involving human subjects. Fluoridation also contravenes the provisions of the European *Convention for the Protection of Human Rights and Dignity of the Human Being with Regard to the Application of Biology and Medicine 1997*.

Fluoridation is also a breach of the right to refuse medical treatment under the NZ Bill of Rights Act 1990.

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THE CASE AGAINST WATER FLUORIDATION

This issue has become topical recently, as the USA try to force it on towns whose citizens vote against it, and Tony Blair has introduced a Bill to make it compulsory in the UK (currently only 10% is fluoridated) in spite of adverse findings by it own "York" review. In New Zealand the Minister of Health is pushing for it to be reintroduced where it has been abandoned, using the downturn in dental health of specific community sectors against the general trend of improving dental health.

As has been highlighted by many recent media articles, the problem is not lack of fluoridation but the decay in the school dental health program.

Much research and other information has come to light in the last 10 years, casting serious doubt (to say the least) on the spectacular claims made since the 1950's about fluorides benefits and safety. The Ministry of Health, as at December 2000, relied predominantly on research from the 1970's and 1980's, much of it in an obscure defunct journal, for its position. This paper discusses the key issues regarding this subject as currently understood .

"No physician in his right senses would prescribe for someone he has never met, whose medical

history he does not know, a substance which is intended to create bodily change, with the advice: 'Take as much as you like, but you will take it for the rest of your life because some people say that it can reduce tooth decay in children'."

Dr Peter Mansfield, Director, Templegarth Trust

"It has long been known that excessive fluoride intake carries serious toxic effects. But scientists are now debating whether fluoride confers any benefit at all."

UNICEF

In October 2000, the NHS Centre for Reviews and Dissemination at York University published a report on fluoridation, commissioned by the Department of Health in 1999. The York Review was called an "independent review", although it was paid for by the government and carried out by the British NHS, a government body that was already committed to fluoridation .The health secretary who launched it said he wanted a review which would "prove once and for all that fluoride is safe and effective". In other words, the review' s intended conclusion was decided in advance by a politician.

The York Review' s terms of reference were widely criticised for being too narrow and thus excludin much important evidence against fluoride for example clinical studies. Most of the research on caries levels is epidemiological. Proof of harm, conversely, is almost impossible to prove this way; clinical studies are needed for comparison with epidemiological data.

In spite of this the report found:

- All studies were of poor design hence low reliability.
- No proof of significant benefit; 15% at best and this was uncertain. (At a maximum of 3 decayed, missing, or filled tooth-surfaces (DMFS) currently in 12 year olds this equates to at best 0.45 DMFS difference out of 128 tooth surfaces in the mouth: arguably not clinically significant);
- No evidence of promotion of "social equity"
- No proof of safety, in fact serious concerns about safety.

Promoters of fluoridation then set about publicising that the Report supported fluoridation, as they had intended it to do. This led Dr. Sheldon, Chairman of the Review Committee, to report this misrepresentation before the House of Lords, stating the true findings of the Report.

The NZ Ministry of Health ignores this report, based on a "review" by a local pro-fluoridationist whom they commissioned for this purpose. The "review" is not only misleading but reaches conclusions totally unsupported by its text, let alone by the York Report itself.

It must be remembered that implementation of fluoridation has had much in common with the GE issue:

- Both have been promoted by vested commercial interests based in the US
- Both have attempted to suppress adverse research findings by threats of withdrawal of funding from universities or dismissal of research staff
- Alternatively adverse research is "repeated" under promoters control to ensure a reversed outcome

- Both have established promotional organisations with positive sounding names (eg "Life Sciences")
- Promoters refuse to publicly debate the issue but operate behind the scenes
- Promoters of fluoridation acted as "technical advisors" to medical journal editorial staff, ensuring only pro-fluoride articles were published

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Environmental Issues

Fluoridation originally arose due to the cost, following litigation, of environmental damage from fluoride effluent in the form of smoke and dust from Aluminium and Superphoshate plants.

The original studies of H Trendley Dean were commissioned by ALCOA. These claimed better dental health in high fluoride communities. ALCOA and Reynolds Metals first sold the idea to the US Public Health Service, who, seeing it as a solution to their embarrassing failure to make any inroads into dental health as was their mandate, then promoted it along with the American Dental Association, even though the American Medical Association had published articles during the 1940's regarding its adverse health effects. In fact Dean was later obliged to admit in court that his analysis was wrong, however that did not stop fluoridation.

Originally Sodium Fluoride from Aluminium smelters was used but today Silicofluorides from Superphosphate production are exclusively used in NZ. The phosphate ore is contaminated with fluoride which cannot be left in the final product as it causes health problems, notably bone deformities, in grazing livestock. It is emitted as gaseous Silicon Tetrafluoride which his extremely toxic and no discharge permit can be obtained under the Resource Management Act. It is "scrubbed' from the effluent stacks with water spray, which it chemically attacks forming Hydrofluorosilicic Acid. This is partially purified to give a 23% solution of industrial grade reagent. Note that this is not pharmaceutical grade (on which all testing is done re Sodium Fluoride) nor even food grade. It is typically contaminated with heavy metals and radioisotopes, varying with the source of the rock phosphate. It is illegal to dump it at sea and it cannot be dumped in toxic waste dumps due to its high leaching mobility. One supplier' Safety Data Sheet for Hexafluorosilicic Acid states:

> "DO NOT let this chemical enter the environment. Dispose of this product as hazardous waste. Consult the supplier to see if he will take it back. Readily filters into soil. Recover cleaning water and dispose of at a specialist site."

As a result many countries offer export incentives to get rid of this waste, generating a world trade in it. The waste is then dumped into the environment via the public water supply, when it could not have been so dumped directly.

The exact level of heavy metals does not appear to be known to those adding it to the water. Suppliers assure water authorities that once diluted to 1 ppm the levels are below that acceptable in drinking water. It does not follow that the levels of these added metals with those which may already be present is within that limit.

Moreover, from an environmental perspective it means that we are importing and dumping into our environment the following heavy metals with every kilogram of Sodium Silicofluoride we add to the water supplies, most of which is not filtered out through the population's kidneys since an estimated 95-99% of water is not used for drinking or cooking.

According to the Wellington Regional Council every kilogram of sodium fluorosilicate may contain the following levels of heavy metal pollutants:

Contaminant	mg/kg
Antimony	148
Arsenic	495
Cadmium	148
Lead	495
Mercury	99
Nickel	990
Selenium	495

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Claimed Benefits

The sole purpose of fluoridation is to reduce tooth decay. The Minister of Health claims that absence of fluoridation can cause such decay that it leads to unemployability but has admits she has no evidence to support such a claim.

It was originally maintained that the benefit of fluoride was obtained by ingestion, getting into the tooth enamel via the bloodstream. This was accepted by the Commission of Inquiry into Fluoridation in 1956 and is the underlying justification for fluoridation. In fact it is now accepted that any benefit is topical, not systemic. That is, fluoride is absorbed into the tooth enamel by direct surface contact. Whether this confers any benefit is another question, but it destroys the entire basis of water fluoridation. In fact, it is further accepted that brushing with fluoride toothpaste has no effect on "pit and fissure" decay (the grinding surface of the molars where most decay occurs), but only gets into the smooth surfaces. In response to this the MoH and NZDA are now advising parents to ensure that children do not spit out toothpaste foam but leave it in their mouths, and eventually swallow it – at around 1000 ppm! And that aside from the effects of the powerful carcinogen Sodium Laurel Sulphate used in toothpaste as a foaming agent!!!

Epidemiological studies.

The early studies claimed a 60% reduction in tooth decay. Although long since debunked this 60% has been repeated for so long it seems to have become part of the NZ mindset.

Regarding claimed reduction in tooth decay the York Review found no significant benefits from even the least unreliable of such studies, and that reliability was poor in any case. At best it found there may be 15% improvement which it considered minimal, which in absolute terms, given most 12 year olds have 1-2 DMFS's amounts to 0.15 – 0.3 of a DMFS out of 128 surfaces in the mouth (studies are usually done on 5 or 12 year olds).

This is borne out by two leading studies.

A USA study by the National Institute for Dental Research (under the main proponent of fluoridation the US PHS) an improvement of 0.6 DMFS (out of 128 tooth surfaces). This ignored the 1-1.5 yr delay in tooth eruption, and therefore possibility of decay, caused by fluoridation,

In Australia the lifetime difference was found to be 0.12-0.3 DMFS.

In New Zealand a research article published in 1996 acknowledged that caries levels have reduced in both fluoridated and unfluoridated communities and the (alleged) benefits are now "only 20%".

The studies originally relied on were:

Grand Rapids-Muskegon
Newburgh-Kingston
Hastings (NZ)

In both the Grand Rapids and Hastings experiments the unfluoridated cities (Muskegon and Napier respectively) had consistently less tooth decay than the fluoridated cities, and improved at the same rate, showing no benefit from fluoride. Muskegon was fluoridated and Napier removed as a control before the experiments were complete and the results reported on a "before and after" basis, invalidating what were supposed to be scientifically "controlled" studies. The ongoing improvement in all populations from 1930 was attributed falsely to fluoridation. In Hastings the instructions to dental nurses was also to stop filling minor decay resulting in an overnight 20% reduction, which was also falsely attributed to fluoride. This study was completely debunked in 1986: the Ministry of Health has never admitted the fallacy but simply no longer mentions it.

In Newburgh, citizens were given other dental care and education as well as the fluoridation resulting in an initial improvement. Even then a professional statistician trashed the analysis and predicted that decay in fluoridated Newburgh would exceed that in Kingston within a short period. In fact this is exactly what happened and even until the present day Kingston has maintained less decay than Newburgh.

Yet it is these studies on which proponents continue to claim 60% improvement and in which the NZ Fluoridation Commission relied.

That dental health has improved across the world is shown by World Health Organisation Figures:

Table 2. Comparison of decayed missing and filled teeth (DMFT) in 12-year olds in European countries compared with the Republic of Ireland.

Country	Year	DMFT	Year	DMFT	Fluoridation status
Ireland	1972	5.4	1992	1.9	66%
Finland	1975	7.5	1991	1.2	Nil
Denmark	1978	6.4	1992	1.3	Nil
UK (GB&NI)	1973	4.7	1993	1.4	10%
Sweden	1977	6.3	1994	1.5	Nil
Holland	1974	6.5-8.2	1991	1.7	Nil
Switzerland	1963-1975	2.3-2.9	1987-1989	2	One town only
France	1975	3.5	1993	2.1	Nil

Norway	1973	8.4	1991	2.3	Nil
Spain	1968-1969	1.9	1993	2.3	one city only
Germany (E)	1973	6	1994	2.5	Nil
Germany (W)				2.6	Nil
Belgium	1972	3.1	1991	2.7	Nil
Austria	1973	1.0-3.5	1993	3	Nil
Italy	1978-1979	4.0-6.9	1985	3	Nil
Portugal	1979	4.6	1989	3.2	Nil

Compiled from World Health Organisation data, Non-communicable Disease Division, 1996.

India is a country with excessive fluoride levels in many areas, and as such leads the world in much fluoride research. Over a 30-year period Professor Teotia and his team in India have examined the teeth of over 400,000 children. They have found that tooth decay increases as fluoride intake increases and concluded that tooth decay results from a deficiency of calcium and excess of fluoride.

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Alleged Promotion of Social Equity in Dental Health

One claim made for water fluoridation is that it ensures the socially underprivileged, who cannot afford or will not undertake proper dental care, will be protected along with more privileged members of society.

The "York" Report, examining all available epidemiological studies, found "no evidence to support the social equity theory."

The early Maori population would have had rampant decay if dental decay was a fluoride deficiency disease. However, only 1:2,000 teeth (0.05%) showed any decay in hundreds of skulls examined in the 1930' s by Dr. Weston Price, a Past President of the American Dental Association. Weston Price showe that within one generation and even between siblings, the incidence rose to 25-40% decay after they adopted European foods.
Similarly, a 1950 survey in American Samoa revealed perfectly healthy teeth in inhabitants of areas with little or no fluoride in the water.

This established that there is no fluoride "deficiency" in NZ water supplies; it is poor diet and especially consumption of white sugar that causes tooth decay. It is, sadly, the underprivileged who tend to drink more soft drinks etc. which also contain acids which further attack tooth enamel. No amount of fluoride will protect teeth against such attack.

In fact the underprivileged are those most susceptible to harm from fluoridation. Adverse health effects on poorly nourished persons, especially those suffering from Calcium or Phosphorus deficiency in their diet.

This was shown by research in Chile, leading to discintinuance of fluoridation on this basis.

Fluoridation was introduced into Chile on 1 September 1953, in the city of Curico. Nearby San

Fernando was chosen as the control city for the same reasons that Napier was chosen as the control city in the Hastings experiment in New Zealand.

Professor Albert Schatz, an eminent scientist, co-discoverer of Streptomycin, the first antibiotic to be effective against tuberculosis, researched the adverse health effects of fluoridation by comparing the effects on the poor people of the two cities. As a result of his findings of increased deaths amongst the poor due to fluoridation this indefensible practice was discontinued in Chile in 1977. Professor Schatz determined the following effects, 1953 to 1963:

Cause of Death	**City**	**Deaths**
Congenital malformations	Curico (fluoride)	3.1 %
Extra deaths = 244%	San Fernando	0.9 %
Digestive system	Curico (fluoride)	18 per 10,000
Extra deaths = 50%	San Fernando	12 per 10,000
Total infant mortality	Curico (fluoride)	56.5 per 10,000
Extra deaths = 69%	San Fernando	33.4 per 10,000
All causes, all age groups	Curico (fluoride)	2255
Extra deaths = 16%	San Fernando	1003

Professor Schatz concluded:

Whether fluoride produces chronic or acute toxicity is generally considered to be determined only by the dose. However, an individual' s nutritional state can markedly influence his susceptibility to fluoride toxicity.

Therefore a concentration of fluoride which is so low that it produces no clinical symptoms in well nourished people may be acutely toxic to certain individuals in a population which is so poorly nourished that malnutrition is responsible for a high infant mortality.

Malnourished infants are probably the most sensitive barometer for revealing harmful effects of fluoride. For infants who are in a poor state of nutrition the addition of a small amount of fluoride to the drinking water may produce acute toxicity and that acute toxicity may cause death.

In the United States the harmful effects of artificial fluoridation are not revealed by large scale comparative studies because Americans as a whole are in a much bettre state of health than Chileans.

If one wants to detect the harmful effects of fluoridation one should not therefore work with total populations: these actually conceal the very information which is purportedly being sought. The well nourished majority overwhelm the statistical difference found amongst the poor. Non-white infant mortality in the US is 38.6% compared with white 18.5%, but whites are 85% of the population: the real facts do not show up when washed out by this proportion.

Professor Schatz' study was based on official Chilean government records. Significantly, in spite of professor Schatz' impeccable credentials, the American Medical Association and the American Dental Association refused to publish his report.

Nursing infants.

These are highly susceptible to fluoride harm if bottle fed. A breast feeding infant is naturally protected: mothers milk contains only 0.016 ppm fluoride regardless of the mother's exposure – a natural protection. A baby drinking formula made with fluoridated water however, receives approximately 50-80 times this level, (depending on fluoridation levels)and will drink 2-4 times more "formula" than breast milk.

The Public Health Commission's 1995 report *Fluoride and Oral Health* states, without reasons, that it does not consider milk substitutes for babies, made with water fluoridated at 0.8 ppm, as harmful, although citing this as 50 times more fluoride than breast milk. However this simple ratio is irrelevant. Based on the recommended 1mg per day for adults, a child from birth to 4 months will receive the equivalent of an adult drinking water at between 6 and 11 ppm, well within the acknowledged toxic range. In comparison a breast fed baby receives the adult equivalent of 0.07 - 0.13 ppm approximately. The NHMRC Review specifically recommended fluoridated water not be used for infant formula in 1999, for this reason.

In Ireland the Food Safety Authority of Ireland (FSAI) Scientific Committee has confirmed that bottle-fed infants are receiving unsafe fluoride levels. They reported, as long ago as 3rd October 2001, that "the assessment indicates that infants below the age of four months are exposed to doses of fluoride that exceed the recognised 'no observable effect' level." The US Academy of General Dentistry has also warned about feeding fluoride to babies. In fluoridated areas, they advise, "it is recommended that parents use low fluoride bottled distilled water (labelled as "purified" or "distilled baby water") or tap water with a reverse osmosis home water filtration system attached that removes most of the fluoride."

Moreover, once a person is over 12, when the enamel has stopped developing and fluoride can no longer confer any benefit, what underprivileged family can afford $300 per year to filter it out of the water?

And what if a family member is hypersensitive. This was highlighted recently in San Antonio, Texas, USA. where a poor family with children hypersensitive to fluoride was eventually provided with a filter free of charge, while other poor inhabitants were denied this. This hypersensitivity was medically diagnosed at an intake of 1.5mg per day, less than that identified by the PHC in its 1994 Report.

> The imposition of fluoridation on the U.K. public presents a significant public health hazard.
> It should further be stressed that simple filtration will not remove fluoride. Expensive reverse osmosis units are required for this purpose. This would impose undue economic burden among lower socioeconomic groups, as also would the alternative of purchasing bottled water.
> I should further note that some 100 leading national and international cancer prevention scientists, and representatives of consumer and environmental organizations have endorsed the Cancer Prevention Coalition' s opposition to fluoride

- Samuel S. Epstein, M.D. Professor emeritus Environmental and Occupational Medicine University of Illinois at Chicago School of Public Health, and Chairman, Cancer Prevention Coalition.
29 May 2003.

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Adverse Health Effects.

In their article on the ethical question, Carton and Cross make the following observation:

[Although not tested in the US], silicofluorides have been tested in Europe, and have been almost universally rejected for failing the safety standards. Consequently, their use has been banned in most EU countries. Since they contain arsenic as a contaminant, it is impossible to use them without contaminating drinking water supplies with arsenic, a known human carcinogen.

Since 1997 fluoridated toothpaste in the USA has carried the following warning:

"If you accidentally swallow more than is needed for brushing [sic] seek professional help or contact a Poisons Control Centre."

The American Dental Association opposed this health warning. They make millions of dollars from accreditation of fluoride products and certainly didn' t want to see a poisons warning on their source c income.

Belgium recently banned all Fluoride supplements because of concerns over health risks.

On 25 April 2002 The US Environmental Protection Agency acknowledged that no human health studies had ever been conducted on Silicofluorides, used universally for water fluoridation in New Zealand. They issued a Request For Assistance:

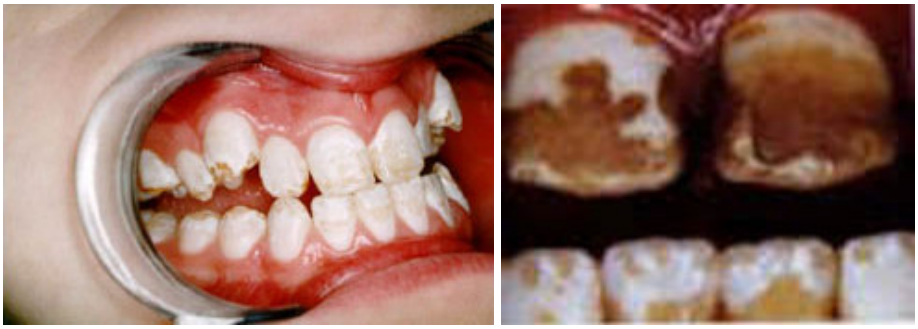
MEASUREMENT OF FLUOROSILICATES IN DRINKING WATER

The primary objective of this RFA is to investigate the reactions that take place when fluorosilicates are added to drinking water supplies and what concentrations of which fluorosilicate species may monitored in finished drinking water supplies and what techniques may be used for such monitoring."

Dental Fluorosis.

In setting an "optimal intake" of 1 mg per day of fluoride, 10% was considered acceptable "collateral damage". The York Review found levels of 50%, with 8% classifies as "severe."

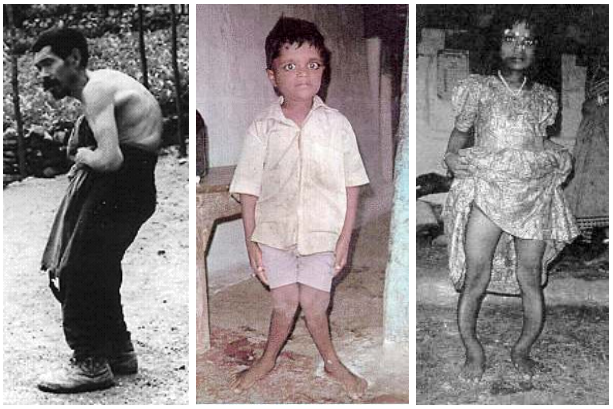
Although proponents claim fluorosis is merely cosmetic, opponents maintain it is the first sign of chronic fluoride poisoning. What is significant is that it is only caused by systemic, not topical fluoride, And only before the tooth erupts, that is before fluoride could possibly do any good.



A lifetime exposure can lead to skeletal fluorosis, with similar initial symptoms to arthritis, which has

increased markedly in recent years, and may in fact be misdiagnosed skeletal fluorosis as acknowledged by WHO - In 1970 the World Health Organisation published the following:

> "At higher levels of ingestion - from 2 to 8 mg daily, skeletal fluorosis may arise ... Whereas dental fluorosis is easily recognised, the skeletal involvement is not clinically obvious until the advanced stage of crippling fluorosis ... early cases may be misdiagnosed as rheumatoid or osteoarthritis.?
> *- Fluorides and Human Health, 1970 pages 239-240*



Examples of advanced skeletal fluorosis

Enzymatic Inhibition

As early as 1933 enzymatic interference from fluorides was recognised by DR F J McClure. The same Dr McClure in 1951 assured the AMA fluoride was completely safe. The Journal of the American Medical Association on September 18, 1943, stated, "Fluorides are general protoplasmic poisons, changing the permeability of the cell membrane by inhibiting certain enzymes. The exact mechanism of such actions are obscure."

Such effect was subsequently confirmed by a number of researchers in the 1970's. Some indicated that inorganic fluorides have a strongly adverse effect on the activity of mitichondrial enzymes, acid and alkaline phosphatases and ATP-utilizing enzymes and aldolase. A particularly important example is the quenching by enzymes of muscle stimulation induced by the neurotransmitter acetylcholine. The principal "quenching" enzyme, acetylcholinsterase, was shown to be inhibited by fluoride in 1975.

Central Nervous System Damage

Humans are exposed to plasma levels of fluoride as high as those in rat studies. Fluoride involves interruption of normal brain development. Fluoride affects the hippocampus in the brain, which integrates inputs from the environment, memory, and motivational stimuli, to produce behavioural decisions and modify memory. Experience with other developmental neurotoxicants prompts expectations that changes in behavioural functions will be comparable across species, especially humans and rats. The most damage is done at the time of birth resulting in either hyperactivity (ADD type symptoms) or lethargy and malaise, depending on the timing of exposure. Proponents ignore this landmark study on the grounds that the water had 1000ppm fluoride in it. This was necessary to give the same total exposure per kg of body weight as humans: rats only drink a few sips of water a day. Further, humans are *more* susceptible to CNS damage than rats because of our more complex nervous system.

Soft Tissue accumulation.

This was found not to occur by the Fluoridation Commission of Inquiry as one of its key findings. In fact much research shows that it does, the most definitive being in 1999, followed up in 2001, showing accumulation in the Pineal gland at levels up to 22,000 ppm. Soft tissue accumulation was in fact known as early as 1957. This was confirmed by subsequent research including contributing to calcification of the blood vessels.

Damage to other organs such as the kidneys, liver, parotid gland, thyroid and pancreasand the aorta and heart has been shown, Damage to the retina (Retinitis) has also been observed but only in percentage of patients – some appear naturally resistant.

Aluminium-Fluoride complexes.

When Aluminium is present fluoride ions complex with it. This can be from the Alum added to catchment water to settle fine particles, from Aluminium cookware, or from Aluminium cans or toothpaste tubes.

Recent clinical research has confirmed indications of increases in cancer found in earlier epidemiological studies. Specifically Aluminium-Fluoride complexes act as phosphate analogues and as such interfere with G-protein activated effector enzymes. This essentially causes spontaneous cell triggering without the presence of the normal stimulus. One G-protein is the ras oncogene found in 50% of human cancers.

Aluminium-Fluoride complexes also produce effects in the brain of the type found in Alzheimer's.

In 1976, Dr DW Allman and co-workers from Indiana University School of Medicine fed animals 1 part per million (ppm) of fluoride and found that in the presence of aluminium in a concentration as small as 20 parts per billion fluoride was able to cause an even larger increase in cyclic AMP levels. Cyclic AMP inhibits the migration rate of white blood cells, as well as the ability of the white blood cells to destroy pathogenic organisms.

Hip Fractures.

Many epidemiological studies on hip fractures have been conducted, with mixed results. The York Review found the matter unproven either way. Hip fractures are generally fatal in the elderly, but are uncommon hence it is difficult to obtain sufficient data for reliable analysis. Likewise the 1999 Australian "Melbourne Review" found the matter unresolved and recommended study of any trends under fluoridation. The NZ Ministry of Health claims that both studies found that this issue was disproven, contrary to their actual findings, and refuses to acknowledge the possibility.

Increased Lead Uptake

In 1999 Masters and Coplan demonstrated that Silicofluorides specifically, as opposed to the original Sodium Fluoride, increase the uptake of dietary Lead, which in turn is linked to violent behaviour. Since the 1950's we have been exposed to Lead both through leaded petrol and, more importantly, solder in canned food. While some brands now plastic line their cans, the cheaper ones do not, again disproportionately disadvantaging the underprivileged.

Cancer

A number of cancers increase with fluoride exposure at 1ppm. Some studies are listed in the Appendix.

Contaminants in the fluoridating agents used.

"Safe" health standards for contaminants in water supplies are supposed to be set at *the level below which there are no known or expected risks to health.* For arsenic and lead this health standard (Max. Contaminant Level Goal, MCLG) is zero in the USA. EPA sets MCLGs of zero for contaminants that are known or probable carcinogens because "there is no known level for carcinogens that is protective of human health over a lifetime."

Legal Is Not Necessarily Safe
The upper legal limits (Max. Contaminant Level, MCL) are supposedly set as close to these health standards as feasible. For arsenic the upper legal limit in the USA has just been lowered from 50 parts per billion (ppb) to 10 ppb, even though the Natural Resources Defense Council urged 3 ppb. This underscores that upper legal limits have more to do with history, politics, and money than with safe health considerations. The limit in New Zealand is also10ppb.

Recent research from Finland (Kurttio et al., 1999) found a 50% increase in bladder cancer for populations consuming water with as little as 0.1 to 0.5 ppb arsenic compared with populations consuming 0.1 ppb arsenic or less. Such research confirms EPA' s health standard of zero is well founded.

But the CDC reports that 39 % of fluorosilicic acid samples, after dilution in drinking water, averaged 0.43 ppb arsenic while the highest concentration was 1.66 ppb. It is clear from the research data above that adding arsenic in these concentrations cannot responsibly be called safe.

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Hypersensitive or Allergic persons

As with even commonly harmless and beneficial substances like Aspirin or Penicillin, some individuals are allergic to fluoride. Symptoms range from mild gastrointestinal disorders through to debilitating Chronic Fatigue and in rare but clinically documented cases, death.

Common symptoms include:

- Retinal disorders and blurred vision;
- Painful joints developing into arthritis, including spinal;
- Muscular spasms;
- Skin disturbances eg acne;
- Stomach disorders.

Persons with such complaints have appeared everywhere fluoridation has been introduced. In Hastings individuals found their symptoms disappeared upon going on holiday or changing water supplies. A number appeared before the Fluoridation Commission of Inquiry, who refused to believe their symptoms arose from Fluoridation, even though they matched the symptoms documented around the world, which were also presented to the Commission. In Windsor, Canada, the same symptoms

appeared even though the water was fluoridated secretly, precluding the possibility of autosuggestion.

The Public Health Commission in 1995 accepted the existence of such persons and recommended steps be taken to identify, assess, and safeguard their health. The Ministry has done nothing.

The Unborn Child

Contrary to common belief, the unborn child is not protected from fluoride by its mother.

In one case the new born died a few hour after birth. Post mortem examination of the organs showed extensive calcium deposits in the aorta, heart and other organs, in the form of calcium fluoride.

In Czechoslovakia five newborns had duodenal hemorrhages from ulcers of a kind induced experimentally with fluorides; their mothers had been working in an industry with fluoride contaminated air.

Although the mothers appear to have been exposed to high doses, this raises the question some NZ mothers have raised as to whether their taking fluoride tablets during pregnancy at the Ministry's recommendation was responsible for adverse health conditions not observed in their other children.

It is for this reason the US Food and Drug Adminsitration **banned the use of fluoride tablets by pregnant women in 1966!**

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Background Exposure Levels

In 1998 Dr Peter Mansfield, Director of the Templegarth Trust, tested over 200 volunteers from the fluoridated West Midlands. He found that 60% of them were ingesting up to four times the amount of fluoride considered by the government to be safe. He sent the results to the very highest levels at the Department of Health - and was ignored. But leading fluoride promoters have attacked him. He commented:

"They have no results of their own and are not willing to replicate my tests. It is obvious that the symptoms of joint pain and stiffness suffered by many of these volunteers are mis-diagnosed. This is most serious negligence."

In New Zealand a similar picture emerges. The Public Health Commission's (PHC) 1994 Report revealed that even in 1992 we were receiving the so called "optimal dose" of 1 mg per day without artificial fluoridation. It identified that adult males in New Zealand consume a total of 1.8 mg/day and teenage males 2.7 mg/day (this is in the toxic range). At 1 litre of water per day fluoridated at 1ppm (=1 mg) the baseline dietary intake without water was therefore 0.8 to 1.7 mg/day. As NZ water typically contains 0.1 to 0.3 ppm, the total intake with unfluoridated water, based on the lower level, would be 0.9 to 1.1 mg/day, exactly the "optimal dosage". Today we drink on average 1.5 litres of water so without considering the increasing background exposure identified by the PHC, we are now getting at least 0.95 to 1.25 mg/day before adding fluoride to the water. The average 1.5 litres a day adds 1.05 mg making a total of 1.95 mg. Teenage males would be getting 3.1 mg per day.

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Human Rights and Medical Ethics

The New Zealand Bill of Rights Act affirms individuals' rights both to refuse medical treatment and not to be subject to non-consensual medical experiment.

We draw our jurisprudence predominantly from countries which fluoridate their water supplies. Those Courts have found against fluoridation being a breach of the rights against compulsory medical treatment on the basis, not that it is not medical treatment, but that it is not *compulsory*: a person can choose to treat it or drink other water: This approach runs against the weight of Rights jurisprudence which holds that a right must be *effectively* protected to be *effectively* enjoyed. Further, to give effect to the rights of those who choose not to use, or are sensitive to, fluoridated water all manufacturers and purveyors of food or beverages for public consumption would need to be required to use unfluoridated water, unless specifically labelled as fluoridated. Any practice less than this undermines, in practice, the non-compulsion basis of such judicial decisions. Such considerations have not been canvassed either by the Fluoridation Commission, the *Lewis* courts, or addressed by The Ministry of Health.

Medical Ethics

The ethical issues raised by fluoridation are ultimately grounded in the Nuremberg Code. This code established the basis for all modern medical research and treatment involving human subjects. All subsequent codes of medical ethics have their origins in this document (1). While the wording of various codes may differ, they all incorporate the fundamental basic requirement: research, or even routine medical procedures, must be done with the voluntary cooperation of the subjects, who must be fully informed of the risks and benefits of the medical procedures in which they are involved.

Medical ethics unequivocally demands that the wishes of the individual must take precedence over actions imposed by the state, unless there is a valid and wider public health concern. A state's interes may legitimately override an individual's wishes if a person with a potentially life-threatening and contagious disease such as measles or Lassa fever refuses to accept treatment and/or quarantine. Obviously tooth decay
does not qualify as such a disease, requiring the state to usurp individual rights. States continue, nonetheless, to insist on their "police power," having convinced the public through press releases that fluoridation is completely benign.

The definition of a medicinal substance has been established by the European Union since February 2002 by the Codified Pharmaceutical Directive 2001/83/EEC. Article 1 defines them as:

Any substance or combination of substances presented for treating or preventing disease in human beings or animals . . .

Any substance or combination of substances which may be administered to human beings or animals with a view to making a diagnosis or to restoring, correcting or modifying physiological function in human beings or animals is likewise considered a medicinal product.

This is almost identical to the American Food and Drug Administration's definition,

Fluoride, when used in the diagnosis, cure, mitigation, treatment, or prevention of disease in man or animal, is a drug that is subject to Food and Drug
Administration (FDA) regulation (3)

The European *Convention for the Protection of Human Rights and Dignity of the Human Being with Regard to the Application of Biology and Medicine 1997* is useful in establishing appropriate standards for intervention, including State intervention, in individual health. Article 5 provides as a general standard:

An intervention in the health field may only be carried out after the person concerned has given free and *informed* consent to it.
This person shall beforehand be given appropriate information as to the purpose and nature of the intervention *as well as on its consequences and risks.*

"Intervention" in this context includes any preventive health measure applied to a human being by any means. It is consequently irrelevant whether added fluorides are "medication" as their use nevertheless constitutes a "medical intervention". Although this highlights a number of key points, the focus for this discussion is that it places a responsibility on the entity conducting the "health intervention" to provide information to the recipient on which to make an informed decision. It is important that a *risk* must be advised, not just proven harm, contrary to the Ministry of Health's position that harm must be proven beyond doubt before it will act. Most importantly, it consequently falls on those promoting fluoridation to, for example, at least publicise the risks to hypersensitive persons, and how they may be identified, or risks regarding the use of fluoridated water for reconstituting baby milk formula, as well as the population at large. The Convention also requires ongoing quality assessment of any health intervention and an intervention must meet criteria of relevance and proportionality between the aim pursued and the means employed.

The *Jacobsen* case canvassed the arguments weighing private rights against the public interest, the parameters for justifying State intervention and concomitant responsibilities, and identified four factors: public health necessity, reasonable means, proportionality, and harm avoidance. Whilst all four factors are controversial regarding fluoridation, for the focus of this paper the "avoidance of harm" issue is particularly addressed. The *Jacobsen* court held firmly that the control measure itself should not pose a health risk to its subject emphasising that Jacobsen was a "fit subject" for smallpox vaccination, but holding that requiring a person to be immunised who would be harmed would be "cruel and inhuman in the last degree." Other cases of this era reiterate that public health actions must not harm subjects. For example, quarantining a San Francisco district was held unconstitutional, in part, because it created conditions likely to spread bubonic plague amongst inhabitants. In parallel with the issue of harm from fluoridation, especially to hypersensitive persons, the *Jacobsen* court held:

"We are not to be understood as holding that the statute [mandating compulsory smallpox vaccination] was intended to be applied to such a case [involving an unfit subject], or, if it was so intended, that the judiciary would not be competent to interfere and protect the health and life of the individual concerned."

From the above discussion we can identify key responsibilities on those promoting fluoridation, either to the public directly or to those who ultimately make the decision:

1. All citizens must be provided with full information on benefits and risks;
2. Research into both beneficial and harmful effects must be continuously monitored and impartially publicised to achieve #1;
3. Where a person does not consent it is arguably the responsibility of those fluoridating the water to ensure the person's autonomy; it is not the responsibility, or at the cost, of the individual;
4. Citizens must not be harmed by the measure. Where it is known that an identifiable person or group will be harmed it is the responsibility of the body fluoridating the water to ensure their safety, or if impossible to refrain from the measure.

None of these parameters is currently met in New Zealand.

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Appendix - Scientific references

The case against fluoride: scientific references

A1 Fluoride exposure disrupts the synthesis of collagen and leads to the breakdown of collagen in bone, tendon, muscle, skin, cartilage, lungs, kidney and trachea.

A.K. Susheela and Mohan Jha, "Effects of Fluoride on Cortical and Cancellous Bone Composition", IRCS Medical Sciences: Library Compendium, Vol 9, No.11, pp.1021-1022 (1981); Y.D. Sharma, "Effect of Sodium Fluoride on Collagen Cross-Link Precursors", Toxicological Letters, Vol.10, pp97-100 (1982); A.K. Susheela and D. Mukerjee, "Fluoride poisoning and the Effect of Collagen Biosynthesis of Osseous and Nonosseous Tissue", Toxicological European Research, Vol 3, No.2, pp. 99-104 (1981); Y.D. Sharma, "Variations in the Metabolism and Maturation of Collagen after Fluoride Ingestion", Biochemica et Biophysica Acta, Vol 715, pp.137-141 (1982); Marian Drozdz et al., "Studies on the Influence of Fluoride Compounds upon Connective Tissue Metabolism in Growing Rats" and "Effect of Sodium Fluoride With and Without Simultaneous Exposure to Hydrogen Fluoride on Collagen Metabolism", Journal of Toxicological Medicine, Vol. 4, pp.151-157(1984).

A2 "Fluorides are general protoplasma poisons, with the capacity to modify the metabolism of cells by inhibiting certain enzymes. Sources of fluoride intoxication include drinking water containing 1ppm or more of fluorine."

Journal of the American Medical Association, September 18, 1943.

A3 Fluoride stimulates granule formation and oxygen consumption in white blood cells, but inhibits these processes when the white blood cell is challenged by a foreign agent in the blood.

Robert A. Clark, "Neutrophillodintion Reaction Induced by Fluoride: Implications for Degranulation and Metabolic Activation," Blood, Vol 57, pp.913-921 (1981).

A4 Fluoride depletes the energy reserves and the ability of white blood cells to properly destroy foreign agents by the process of phagocytosis.

A5 As little as 0.2 ppm fluoride stimulates superoxide production in resting white blood cells, virtually abolishing phagocytosis. Even micro-molar amounts of fluoride, below 1ppm, may seriously depress the ability of white blood cells to destroy pathogenic agents.

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Kinetics of Superoxide Generation by Fluoride", Journal of Dental Research, Vol. 64, p.281 (1985); A.S. Kozlyuk, et al., "Immune Status of Children in Chemically Contaminated Environments", Zdravookhranenie, Issue 3, pp.6-9 (1987);

A6 Fluoride confuses the immune system and causes it to attack the body's own tissues, and increases the tumour growth rate in cancer prone individuals.

Alfred Taylor and Nell C. Taylor, "Effect of Sodium Fluoride on Tumour Growth", Proceedings of the Society for Experimental Biology and Medicine, Vol 119,p.252(1965)

Sheila Gibson, "Effects of Fluoride on Immune System Function", Complementary Medical Research, Vol 6, pp.111-113 (1992); Peter Wilkinson, "Inhibition of the Immune System With Low Levels of Fluorides", Testimony before the Scottish High Court in Edinburgh in the Case of McColl vs. Strathclyde Regional Council, pp. 17723-18150, 19328-19492, and Exhibit 636, (1982); D.W. Allman and M.Benac, "Effect of Inorganic Fluoride Salts on Urine and Cyclic AMP Concentration in Vivo", Journal of Dental Research, Vol 55 (Supplement B), p.523 (1976); S. Jaouni and D.W. Allman, "Effect of Sodium Fluoride and Aluminium on Adenylate Cyclase and Phosphodiesterase Activity", Journal of Dental Research, Vol.64, p.201 (1985)

A7 Fluoride inhibits antibody formation in the blood.

S.K. Jain and A.K. Susheela, "Effect of Sodium Fluoride on Antibody Formation in Rabbits", Environmental Research, Vol.44, pp.117-125 (1987).

A8 Fluoride depresses thyroid activity.

Viktor Gorlitzer Von Mundy, "Influence of Fluorine and Iodine on the Metabolism, Particularly on the Thyroid Gland," Muenchener Medizinische Wochenschrift, Vol 105, pp182-186 (1963); A. Benagiano, "The Effect of Sodium Fluoride on Thyroid Enzymes and Basal Metabolism in the Rat", Annali Di Stomatologia, Vol 14, pp.601-619n (1965);Donald Hillman, et al., "Hypothyroidism and Anemia Related to Fluoride in Dairy Cattle," Journal of

Dairy Science, Vol 62, No.3, pp.416-423 (1979); V. Stole and J. Podoba, "Effect of Fluoride on the Biogenesis of Thyroid Hormones", Nature, Vol 188, No.4753, pp.855-856 (1960); Pierre Galleti and Gustave Joyet, "Effect of Fluorine on Thyroid Iodine Metabolism and Hyperthyroidism", Journal of Clinical Endocrinology and Metabolism, Vol. 18, pp.1102-1110 (1958).

A9 Fluorides have a disruptive effect on various tissues in the body.

T.Takamorim "The Heart Changes in Growing Albino Rats Fed on Varied Contents of Fluorine," The Toxicology of Fluorine, Symposium, Bern, Switzerland, Oct 1962, pp.125-129; Vilber A.O. Bello and Hillel J. Gitelman, "High Fluoride Exposure in Hemodialysis Patients", American Journal of Kidney Diseases, Vol. 15, pp.320-324 (1990); Y.Yoshisa, "Experimental Studies on Chronic Fluorine Poisoning", Japanese Journal of Industrial Health, Vol 1, pp.683-690 (1959).

A10 Fluoride promotes development of bone cancer.

J.K. Mauer, et al., "Two-year carcinogenicity study of sodium fluoride in rats", Journal of the National Cancer Institute, Vol 82, pp1118-1126 (1990); Proctor and Gamble "Carcinogencity studies with Sodium Fluoride in rats" National Institute of Environmental Health Sciences Presentation, July 27, 1985; S.E. Hurdley et al., "Drinking Water Fluoridation and Osteosarcoma" Canadian Journal of Public Health, Vol 81, pp.415-416 (1990); P.D. Cohn, " A Brief Report on the Association of Drinking Water Fluoridation and Incidence of Osteosarcoma in Young Males", New Jersey Department of Health, Trenton, New Jersey, Nov 1992; M.C. Mahoney et al.,"Bone Cancer Incidence Rates in New York", American Journal of Public Health, Vol 81, pp.81, 475 (1991); Irwin Herskowitz and Isabel Norton, "Increased Incidence of Melanotic Tumors Following Treatment with Sodium Fluoride", Genetics Vol 48, pp.307-310 (1963); J.A. Disney, et al., " A Case Study in Testing the Conventional Wisdom; School-Based Fluoride Mouthrinse Programs in the USA" Community Dentistry and Oral Epidemiology, Vol 18, pp.46-56 (1990); D.J. Newell, "Fluoridation of Water Supplies and Cancer - an association?", Applied Statistics, Vol 26, No.2, pp.125-135 (1977). See also http://home.iae.nl/users/lightnet/health/fluoridenewyork.htm .

"In point of fact, fluoride causes more human cancer death, and causes it faster, than any other chemical": Dean Burk, Chief Chemist Emeritus, US National Cancer Institute, cit http://www.second-opinions.co.uk/fluoride.html.

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Nicholas Leone, et al., "Medical Aspects of Excessive Fluoride in a Water Supply", Public Health Reports, Vol 69, pp.925-936 (1954); J. David Erikson, "Mortality of Selected Cities with Fluoridated and Non-Fluoridated Water Supplies", New England Journal of Medicine, Vol. 298, pp.1112-1116 (1978); "The Village Where People are Old Before their Time", Stern Magazine, Vol 30, pp.107-108,111-112 (1978)

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Yngve Ericsson and Britta Forsman, "Fluoride retained from mouth rinses and dentifrices in preschool children", Caries Research, Vol.3, pp.290-299 (1969); W.L. Augenstein, et al., "Fluoride ingestion in children: a review of 87 cases", Pediatrics, Vol 88, pp.907-912, (1991); Charles Wax, "Field Investigation report", State of Maryland Department of Health and Mental Hygiene, March 19, 1980, 67pp; George Waldbott, "Mass Intoxication from Over-Fluoridation in Drinking Water", Clinical Toxicology, Vol 18, No.5, pp.531-541 (1981).

A13 Fluorides diminish the intelligence capability of the human brain.

X.S.Li et al, Fluoride, Vol 26, No.4, pp.189-192, 1995, "Effect of Fluoride Exposure on Intelligence In Children". Presented to the 20th Conference of the International Society for Fluoride Research, Beijing, China, September 5-9, 1994.

A14 Fluoride studies in rats may be indicative of a potential for motor disruption, intelligence deficits and learning disabilities in humans.

A15 Humans are exposed to plasma levels of fluoride as high as those in rat studies. Fluoride involves interruption of normal brain development. Fluoride affects the hippocampus in the brain, which integrates inputs from the environment, memory, and motivational stimuli, to produce behavioural decisions and modify memory. Experience with other developmental neurotoxicants prompts expectations that changes in behavioural functions will be comparable across species, especially humans and rats.

Neurotoxicology and Teratology, Vol 17, No,2, p.176, "Neurotoxicity of Sodium Fluoride in Rats", Mullenix, Denbesten, Schunior, Kernan, 1995.

A16 Fluorides accumulate in the brain over time to reach neurologically harmful levels.

Neurotoxicology and Teratology, Vol 17, No,2, p.176, "Neurotoxicity of Sodium Fluoride in Rats", Mullenix, Denbesten, Schunior, Kernan, 1995.

A17 "..that the use of drinking water containing as little as 1.2 to 3 ppm of fluoride will cause such developmental disturbances in bones as osteosclerosis, spondylosis, and osteoporosis, as well as goitre. We cannot run the risk of producing such serious systemic disturbances. The potentialities for harm outweigh those for good."

Journal of the American Dental Association, Editorial, October 1, 1944.

A18 The contents of a family-size tube of fluoridated toothpaste is enough to kill a 25-pound child.

In 1991, the Akron (Ohio) Regional Poison Center reported that "death has been reported following ingestion of 16mg/kg of fluoride. Only 1/10 of an ounce of fluoride could kill a 100 pound adult. According to the centre, "fluoride toothpaste contains up to 1mg/gram of fluoride." Even Proctor and Gamble, the makers of Crest, acknowledge that a family-sized tube "theoretically contains enough fluoride to kill a small child." (National Pure Water Association, UK).

A19 Fluorides have been used to modify behaviour and mood of human beings.

"It is a little known fact that fluoride compounds were added to the drinking water of prisoners to keep them docile and inhibit questioning of authority, both in Nazi prison camps in World War 2 and in the Soviet gulags in Siberia." (National Pure Water Association, UK).

A20 Fluorides are medically categorized as protoplasmic poisons, which is why they are used to kill rodents.

The Journal of the American Medical Association on September 18, 1943, states, "fluorides are general protoplasmic poisons, changing the permeability of the cell membrane by inhibiting certain enzymes. The exact mechanism of such actions are obscure.".

A21 Fluoride consumption by human beings increases the general cancer death rate.

In 1975 Dr John Yiamouyiannis published a preliminary survey which showed that people in fluoridated areas have a higher cancer death rate than those in non-fluoridated areas. The National Cancer Institute attempted to refute the studies. Later in 1975, Yiamouyiannis joined with Dr Dean Burk, chief chemist of the National Cancer Institute (1939-1974) in performing other studies which were then included in the Congressional Record by Congressman Delaney, who was the original author of the Delaney Amendment, which prohibited the addition of cancer-causing substances to food used for human consumption.

Both reports confirmed the existence of a link between fluoridation and cancer. (Note: Obviously Dr Burk felt free to agree with scientific findings only after his tenure at NCI ended, since his job depended on toeing the party line).

Research carried out at Boston University School of Public Health, using data from the Irish National Cancer Registry and its Northern Ireland equivalent, found 40% more people suffer from the rare bone cancer osteosarcoma in the heavily-fluoridated Irish Republic than in Northern Ireland, where water is not fluoridated. See http://www.online.ie/news/irish_examiner/viewer.adp?article=1629801 .

A22 Fluorides have little or no effect on decay prevention in humans.

In 1990 Dr John Colquhoun was forced into early requirement in New Zealand after he conducted a study on 60,000 school children and found no difference in tooth decay between fluoridated and non-fluoridated areas. He additionally found that a substantial number of children in fluoridated areas suffered from dental fluorosis. He made the study public. In 1998 he summarised the reasons for opposition to fluoridation. You can read them at: http://www.fluoride-journal.com/98-31-2/312103.htm or in FLUORIDE 31(2), 1998, pp 103-118.

A23 "It has long been known that excessive fluoride intake carries serious toxic effects. But scientists are now debating whether fluoride confers any benefit at all. ... Fluoride inhibits enzymes that breed acid-producing oral bacteria whose acid eats away tooth enamel. This observation is valid, but some scientists now believe that the harmful impact of fluoride on other useful enzymes far outweighs the beneficial effect on caries prevention."

UNICEF, http://www.unicef.org/programme/wes/info/fluor.htm .

In 1989 a study by Hildebolt et al on 6,000 school children contradicted any alleged benefit from the use of sodium fluorides.

In 1992 Michael Perrone, a legislative assistant in New Jersey, contacted the FDA requesting all information regarding the safety and effectiveness of fluoride tablets and drops. After 6 months of stalling, the FDA admitted they had no data to show that fluoride tablets or drops were either safe or effective. They informed Perrone that they would "probably have to pull the tablets and drops off the market."

A24 The fact that fluoride toothpastes and school-based mouth rinses are packaged in aluminium

accentuates the effect on the body.

In 1976, Dr DW Allman and co-workers from Indiana University School of Medicine fed animals 1 part per million (ppm) of fluoride and found that in the presence of aluminium in a concentration as small as 20 parts per billion, (like in a toothpaste tube, using aluminium pans to boil water, or drinking beverages in aluminium cans), fluoride was able to cause an even larger increase in cyclic AMP levels.

Cyclic AMP inhibits the migration rate of white blood cells, as well as the ability of the white blood cell to destroy pathogenic organisms. Ref: Journal of Dental Research, Vol 55, Sup B, p523, 1976, "Effect of Inorganic Fluoride Salts on Urine and Tissue Cyclic AMP Concentration in Vivo".

A25 "Fluoridation is the greatest case of scientific fraud of this century, if not of all time."

Robert Carton, Ph.D., former U.S. EPA scientist, on "Marketplace" Canadian Broadcast Company Nov 24, 1992.

A26 "Regarding fluoridation, the EPA should act immediately to protect the public, not just on the cancer data, but on the evidence of bone fractures, arthritis, mutagenicity and other effects"

William Marcus PhD, senior EPA toxicologist, Covert Action, Fall 1992, p.66.

A27 Fluoride interacts with alum in drinking water to cause brain and kidney damage.

"Chronic administration of aluminium-fluoride or sodium-fluoride to rats in drinking water: alterations in neuronal and cerebrovascular integrity": Varner, J.A., Jensen, K.F., Horvath, W. And Isaacson, R.L. Brain Research 784 284-298 (1998) and cited in Fluoride Journal, FLUORIDE 31(2), 1998, pp 91-95.

A28Chemicals added to water, including fluoride, cause Irritable Bowel Syndrome.

Professor A.K. Susheela and her scientific colleagues at the Fluorosis Research and Rural Development Foundation found that Irritable Bowel Syndrome, also known as non-ulcer dyspepsia, colitis, 'spastic colon' or Crohn's Disease can be caused (or exacerbated) by intake of chemically treated drinking water. Biopsy results of the adverse effects on gastric cells are shown in surprisingly detailed electron micrographs. Professor Susheela and her co-workers discovered that chemically-induced IBS can be successfully reversed without medication simply by avoiding water and products containing the chemical. (See http://www.npwa.freeserve.co.uk/IBS.html <http://216.32.180.250:80/cgi-bin/linkrd?_lang=EN&lah=9e78f787f98abfbf80ae27c348fc33ec&lat=1028120893&hm___action=http%3a%2f%2fwww%2enpwa%2efreeserve%2eco%2euk%2fIBS%2ehtml>).