

Legal perspective - Fluoridation of Public Water Supply

The allowable levels of toxic substances, including fluorides, in public water supplies are specified by the NZ Drinking Water Standards.

Water supplies are under the control of territorial authorities – local or district councils. (In Wellington the Wellington Regional Council supplies water to the territorial authorities who then supply it to individual customers) They, AND ONLY THEY, have the legal power to treat water supplies and hence the potential to add fluoride.

Territorial authorities have never has *explicit* statutory authority to add fluoride to the public water supply. Until 2002, they relied on the Privy Council ruling in 1964 in the case of *Attorney-General; ex relatione Lewis v Lower Hutt City* [1965] NZLR 116.: that the power to provide “pure water” did not prevent the addition of medication such as fluoride. Although not explicitly stated in the judgment, this was conditional upon fluoride not making the water less “wholesome”, such as through demonstrated adverse health risks.

Changes in wording in the Local Government Act 2002 mean that the Privy Council ruling no longer applies. Councils now have NO demonstrable statutory authority to fluoridate the public water supply.

Moreover, under section 23 of the Health Act 1956, councils have a statutory duty to protect the public from environmental health risks, such as from fluoride (shortened for ease of reading):

23 General powers and duties of local authorities in respect of public health

It shall be the duty of every local authority to improve, promote, and protect public health within its district

and for that purpose every local authority is hereby directed—

(c) if satisfied that any condition **likely to** be injurious to exists in the district, to cause all proper steps to be taken to secure the abatement of the nuisance or the removal of the condition:

This is the full version, for reference:

23 General powers and duties of local authorities in respect of public health

Subject to the provisions of this Act, **it shall be the duty of every local authority to improve, promote, and protect public health within its district**, and for that purpose **every local authority is** hereby empowered and **directed—**

(c) **if satisfied that** any nuisance, or **any condition likely to be injurious to health** or offensive, **exists in the district, to cause all proper steps to be taken to secure the abatement of the nuisance or the removal of the condition:**

So, if it is "likely" that fluoride poses health risks, the council is obliged to cease fluoridation. The standard of “likely to” has been defined by the courts as “a real, not fanciful, possibility, but not requiring a greater than 50% probability”.

There is no need for the 110% proof that the Ministry of Health suggests. It is only necessary to show a real possibility of risk. This has been demonstrated repeatedly

in international scientific journals, the standard of authority specified by the Ministry of Health, in relation to:

- Heart disease
- Increasing premature birth rates with associated infant deaths
- Osteosarcoma
- Arthritis/skeletal fluorosis
- Bone fractures
- Thyroid inhibition
- Neurotoxicity, especially to children

On the basis of current scientific evidence, the burden of proof – real possibility – has been met, and it is the Council’s duty to end fluoridation, in compliance with section 23.

So unless the Ministry of Health can provide scientific evidence, peer-reviewed and accepted by the international scientific community, that every one of these studies is false, councils must stop fluoridation pursuant to section 23 of the Health Act.

And it is irrelevant whether fluoridation reduces tooth decay or not, once a risk to the public health has been established as a real possibility. Section 23 does not allow for “trade-offs” of harm with alleged benefit.

Law suits have already begun being filed in the USA, and one is pending in Australia. With the amount of scientific evidence provided to the council on the adverse health risks of fluoridation, unchallenged by the Ministry of Health or DHB on any credible scientific basis, it would be appropriate to avoid such future legal liability.

A summary of the first 4 US law suits is attached as Appendix 1.

Standard of evidence

The Ministry of Health has acknowledged under the Official Information Act that a case **against fluoridation** can be made on the same standard of evidence as the case **for fluoridation**. The one-sided (mis)information provided by the Ministry of Health cannot therefore be relied on.

Please note that your Medical Officer of Health, like the DHB, is contracted to the Ministry of Health to **promote fluoridation**. Neither is allowed, under their Contract for Services, to give you accurate, balanced, unbiased information on fluoridation, even if they have it. Their Contract for Services requires them to promote fluoridation policy regardless of any contrary facts.

Heart Disease

Research published in January 2012¹ concluded that there was a direct correlation between the fluoride level in arteries, including coronary arteries, and

¹ Li, Yuxin; Berenji, Gholam R.; Shaba, Wisam F.; Tafti, Bashir; Yevdayev, Ella; Dadparvar, Simin “Association of vascular fluoride uptake with vascular calcification and coronary artery disease” *Nuclear Medicine Communications*: January 2012, Volume 33, Issue 1; p 14–20

atherosclerosis, such that the scanning for the fluoride level could be used to diagnose the level of disease.

It found a direct relationship between the fluoride level and the patient's history of heart disease, and concluded that "[a]n increased fluoride uptake in coronary arteries may be associated with an increased cardiovascular risk."

This confirms many studies showing a relationship between fluoride and heart disease, as discussed in detail below.

Perhaps most importantly, this unquestionably proves that fluoride does accumulate in soft tissue – something fluoridation promoters deny emphatically, claiming it all goes to the bones or teeth, and never the soft tissues.

Ercan Varol *et al*, *Science of the Total Environment*, Volume 408, Issue 11, 1 May 2010, Pages 2295-2298

Ercan Varol *et al*, *Biological Trace Element Research*, Volume 133, Number 2 / February, 2010

This research shows fluoride affects the aorta (main artery) and heart in ways that lead to increased heart attacks.

This confirms findings from the earliest days of water fluoridation in the USA that deaths from heart attacks sky-rocketed in the fluoridated communities, compared with the non-fluoridated ones. This is shown by official US government data.

The heart beat rate slows, and heart rate abnormalities increase, in direct proportion to increasing fluoride levels. This occurred at the relatively low fluoride levels that cause symptoms mistaken for arthritis, in NZ as elsewhere according to WHO.

Elevated blood-fluoride levels lower available body calcium. Low calcium is directly related to impaired heart function. Extremely low calcium causes cardiac arrest. This is how acute lethal doses of fluoride (about 1-1/2 tablespoons) work – by starving the heart of calcium until it stops.

Research published in 2010 shows fluoride affects the aorta (main artery) and heart in ways that lead to increased heart attacks.² (This refutes claims by fluoridation promoters that fluoride does not accumulate in soft tissue – it does, particularly arteries, ligaments, skeletal muscle, and the brain.)

This confirms earlier studies showing high blood-fluoride levels have an effect on body calcium, leading to calcification of the aorta and other arteries.^{3,4}

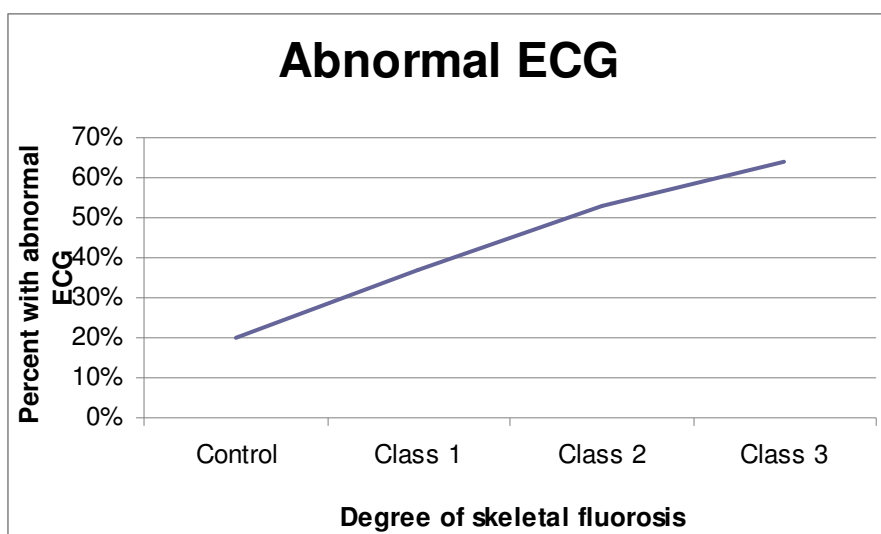
Further research shows that the heart beat rate slows, and heart rate abnormalities increase, in direct proportion to increasing fluoride levels. This occurred at the relatively low fluoride levels that cause symptoms mistaken for arthritis, in NZ as elsewhere according to WHO. Fluoride accumulates over a period of 20 to 40 years

² Ercan Varol *et al*, *Biological Trace Element Research* Feb 2010, *Science of The Total Environment* May 2010

³ Song *et al* "Observations on fluorotic aorta sclerosis by two-dimensional echo cardiography" *Endemic diseases Bulletin* 5, 1990, (1) 91-93

⁴ Liang *et al* "Investigation and analysis of cardiovascular disease in endemic and non-endemic fluorosis areas" *He Bei Province Journal of Endemiology* 12, (1984) 44.

to reach the “Class 1” level (that has this effect), shown in the chart below. Arsenic and fluoride (both high in the water supplies under study) were seen to be able to exert toxic effects independently. Fluoride’s effects were evident at water at levels of 0.2 mg/L or more of fluoride.^{5,6}



In laboratory studies, cultured myocardial cells of mice were adversely affected by fluoride.⁷ Statistically significant increases in the concentrations of sodium and potassium, and decreases in calcium and phosphorus concentrations were observed in rats given fluoride.⁸

While many studies quoted here were conducted in areas with high fluoride levels in drinking water, total fluoride exposure today is at a similar level. Further, since fluoride is a cumulative poison, lower levels of fluoride will have a more subtle long-term effect, thus increasing heart problems – still the number one killer in our society.

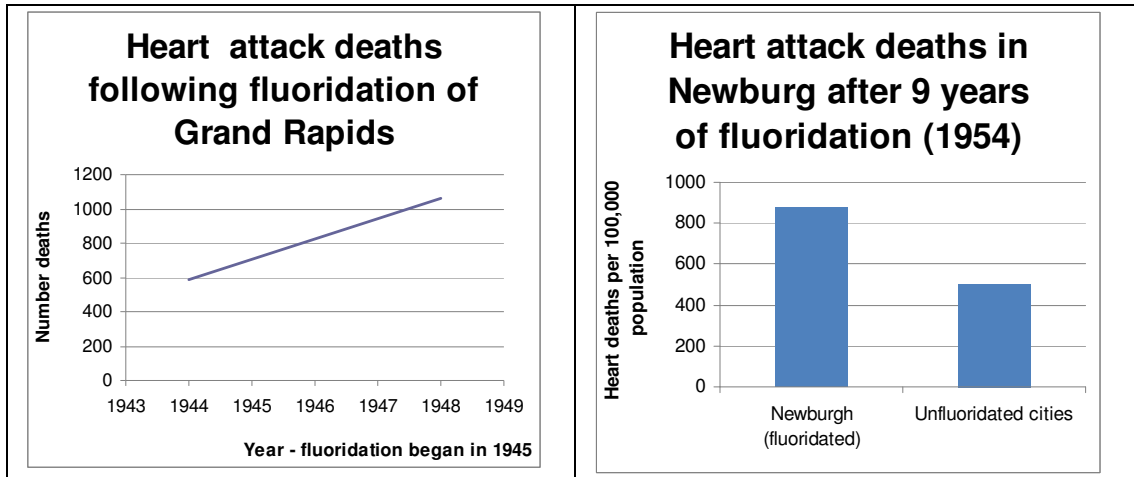
This research confirms findings from the earliest days of water fluoridation in the USA that deaths from heart attacks sky-rocketed in the fluoridated communities, compared with the non-fluoridated ones:

⁵ Wang et al, “Toxicity From Water Containing Arsenic and Fluoride in Xinjiang” Fluoride Vol. 30 No. 2 81-84 1997

⁶ Teitz N., Clinical Chemistry, W B Saunders, Philadelphia. 1976.

⁷ Qin CD et al “Effect of fluoride on spontaneous electrical activity of cultured myocardial cells” *Chinese Journal of Endemiology* 7, 1988, (5) 270-273

⁸ R. J. Verma and D. M. Guna Sherlin “Hypocalcaemia in parental and F₁ generation rats treated with sodium fluoride” *Food and Chemical Toxicology* Volume 40, Issue 4, April 2002, Pages 551-554



Japanese researchers found that children with dental fluorosis have a higher incidence of heart damage than those without fluorosis.⁹ Chinese researchers showed an increase in abnormal heart rhythm in patients with dental fluorosis.¹⁰

NZ studies show twice as many children in fluoridated areas have dental fluorosis than do non-fluoridated children. This epidemic of dental fluorosis in NZ shows that even our children are at risk of heart problems from fluoridation.

Fluoridation increases premature birth rates, with associated infant illness and death

Supported by research spanning 60 years, from USA, Chile, and India.

Research from India, 2010¹¹

The sample group was introduced to two interventions:
 (1) removal of fluoride from ingestion through drinking water, food and other sources,
 (2) counselling based intake of essential nutrients

Urine fluoride levels decreased in 53- 67%
 Haemoglobin levels increased upon withdrawal of fluoride followed by nutritional intervention in 73% - 83%

The percentage of pre-term deliveries decreased
 Birth weight of babies enhanced in 77 - 80% in sample group as opposed to 47-49% in the control group.

⁹ *The Lancet*, Jan. 28, 1961, p. 197, Tokushima J. *Exper., Med.* 3-50-53, 1956

¹⁰ Wang et al, "Toxicity From Water Containing Arsenic and Fluoride in Xinjiang" *Fluoride* Vol. 30 No. 2 81-84 1997

¹¹ "Effective interventional approach to control anaemia in pregnant women"

A. K. Susheela¹, N. K. Mondal¹, Rashmi Gupta¹, Kamla Ganesh¹,
 Shashikant Brahmkar¹, Shammi Bhasin² and G. Gupta²
 CURRENT SCIENCE, VOL. 98, NO. 10, 25 MAY 2010; 1320 - 1330

¹Fluorosis Research and Rural Development Foundation, 34, I.P. Extension, Delhi 110 092, India
²Department of OBGY, Deen Dayal Upadhyay Hospital, Hari Nagar, New Delhi 110 064, India

The number of low birth weight babies was reduced to 20% - 23%, as opposed to 51% - 53%.

Researchers' conclusion:

Maternal and child under-nutrition and anaemia is not necessarily due to insufficient food intake but because of the derangement of nutrient absorption due to damage caused to GI, mucosa **by ingestion of undesirable chemical substance, viz. fluoride** through food, water and other sources.

These findings provide a new path for reducing the burden of disabled and mentally challenged children by reducing percentage of low birth weight babies [through reduction of fluoride intake during pregnancy].

State University of New York 2009¹²

The annual incidence of preterm birth (PTB) (<37 weeks gestation) in the United States is approximately 10%

Associated with considerable morbidity and mortality.

Based on current literature, theoretically one would expect water fluoridation to be protective against PTB. The opposite was found.

Study results:

Risk of PTB 6.34% in women exposed to water fluoridation
Risk of PTB 5.52% in women NOT exposed to water fluoridation
Difference 15%

Relationship was most pronounced among women in the lowest SES groups (>10% poverty) and those of non-white racial origin.

Domestic water fluoridation was independently associated with an increased risk of PTB in logistic regression, after controlling for age, race/ethnicity, neighborhood poverty level, hypertension, and diabetes.

US 1950 – 1969. 20 city study¹³

Infant mortality rate per 1000 live births for **non-whites**:
Fell by 9.03 in the non-fluoridated cities.
Fell by only 1.93 in the fluoridated cities
= 4.7 times better in non-fluoridated cities

Infant mortality rate per 1000 live births for **whites**:
Fell by 5.22 in the non-fluoridated cities.
Fell by only 3.33 in the fluoridated cities
= 1.7 times better in non-fluoridated cities

Reduction in improvement due to fluoridation in non-whites was 2.8 times more (i.e. worse) than in whites.

Chile 1976¹⁴

Research of Dr Albert Schatz, discoverer of streptomycin, the first cure for tuberculosis.

Data is from Chilean Government records.

Curico: 1ppm fluoride

San Fernando: 0% fluoride

¹² 197468 Relationship between municipal water fluoridation and preterm birth in Upstate New York Rachel Hart, BA, MPH, et al. Department of Epidemiology & Biostatistics, School of Public Health, University at Albany, State University of New York, Rensselaer, NY
<http://apha.confex.com/apha/137am/webprogram/Paper197468.html>

¹³ Fluoride – the Aging Factor, J Yiamouyiannis, Health Action Press 1986

¹⁴ Schatz A. Increased Death Rates in Chile with Artificial Fluoridation of Drinking Water, with Implications for other Countries. *Journal of Arts Humanities and Science* Vol 2 No1 January 1976 :1-17.

Cause of Death 1953-63	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

Osteosarcoma

The Ministry of Health and DHBs have falsely claimed that Bassin's study had been discredited. The National Fluoridation Information Service has since repeated the claim "there are major methodological flaws in the two main studies".

We asked NFIS what they were referencing, under the Official Information Act. NFIS confirmed it referred to Bassin and Sandhu.

Regarding Bassin, three sources were quoted, none of which is valid:

1. The Health Impact Assessment (HIA), prepared by three Hawke's Bay Medical Officers of Health in 2009. In criticising Bassin, the HIA relies on Douglass and Joshipura, discussed below.
2. The NHMRC Review 2007, which in fact gave Bassin's study a quality rating of "fair to good". It made some criticisms of methodology, as one would expect from a systematic review, but not to the extent claimed by the NFIS, and not all criticisms were valid. (For example it criticised the fact that the fluoridated individuals drank less bottled water. But if they drank (unfluoridated) bottled water, they would not have been in the "fluoridated" group, as Bassin estimated individual fluoride intake!).
3. The opinion of "Professor" Cox, director of NZ's cancer epidemiology group at Otago University medical faculty (which promotes fluoridation). In fact Mr Cox is an Associate Professor only; not a full professor. However, the NFIS has no correspondence from Mr Cox – it seems to be relying on the Hawke's Bay HIA document, which refers to a private communication from Mr Cox to an unspecified recipient. We asked Mr Cox for his analysis supporting the claim in his communication. He has never conducted an analysis of Bassin's study, hence his opinion has no validity. Neither could he recall any correspondence with the HIA authors.

The facts

Bassin's study¹ was conducted as PhD research. Her methodology was approved by her PhD supervisor, and Harvard University's doctoral board. Her thesis was later published in the journal *Cancer Causes and Control* in May 2006 (Bassin et al., 2006). Her thesis supervisor, and fluoridation promoter, in a letter to the same issue of this journal, (Douglass and Joshipura, 2006) claims that his larger work did not find the same relationship as Bassin.

Douglass' study was published in July 2011.

1. It was a smaller, not larger, study than Bassin's.
2. It had major methodological flaws
3. It did not address age-related exposure at all – Bassin's key finding.
4. It only measured bone fluoride levels, which relates to total lifetime exposure. This is known to be irrelevant.

We are aware of no *bona fide* criticism of her methodology, published in any internationally recognized peer-reviewed journal – the standard required by the Ministry of Health. Those who politically promote fluoridation inappropriately quote this letter to the editor – essentially a broken promise - as scientific proof that Bassin was wrong.

Another study examining osteosarcoma rates in New Jersey (New Jersey Department of Health [Cohn] 1992)ⁱⁱ also found a 5 – 7 fold increased risk of osteosarcoma in young males living in fluoridated areas of three counties compared to non-fluoridated areas.

Other epidemiological studies have not found this association but Bassin's study is the only one that pursued the possibility of the actual timing of fluoride exposure and this risk. The 6th, 7th and 8th years in which she found an increased risk corresponds to the mid-childhood growth spurt in which there is rapid bone turnover a situation which makes a tissue more vulnerable to genetic damage. Consequently other studies do not in any way refute Bassin's study. It would be like looking in trees and concluding there are no earthworms in NZ – if you look in the wrong place you will never find what you are looking for.

Number of NZ cases

Health officials quote approximately 3.5 deaths from osteosarcoma of adolescent males per year in NZ. Around 55- 60% of NZers drink fluoridated water, and those in unfluoridated communities get it in soft drinks, processed food, etc. If Bassin and Cohn are right, at least 2 of those deaths are caused by fluoridation. Is it acceptable to kill 2 young men each year because fluoridation might reduce tooth decay? Even when the main, and perhaps only, way fluoride strengthens enamel is by use of fluoride toothpaste or professional fluoride dental applications?

Whether any of these deaths occur in Waipukurau or not, fluoridating councils have, in our view, collective responsibility for these deaths.

Blood fluoride study

The study on blood-fluoride levels was by Sandhu (2009).ⁱⁱⁱ It was peer reviewed by experts before being published in an internationally recognised journal.

NFIS' response to our information request

Regarding Sandhu, no published analysis or critique had been sighted, or was available to support the claim. The NFIS relied on the alleged "expertise" of the three Hawke's Bay Medical Officers of Health who authored the HIA report. No evidence of such alleged expertise was provided. No scientific critique is included or referred to by them in the HIA report – they just express a view consistent with their contractual obligations to the Ministry of Health to support fluoridation policy.

Appendix 1: Fluoridation law suits filed in the USA

August 19, 2011

Three lawsuits have been filed recently in the U.S. that could have a major impact on the fluoridation debate.

The first lawsuit is in Clallam County, Washington. On April 28, Protect the Peninsula's Future, Clallam County Citizens for Safe Drinking Water, and Eloise Kailin filed suit in superior court against the cities of Forks and Port Angeles, Washington, noting that the fluoride chemicals being used matched the definition for prescription drugs. The suit alleges that the cities lacked the necessary permits for dispensing these drugs. Plaintiffs requested that the practice be halted under search and seizure statutes until permits were obtained. The request was denied by the superior court, but a review by the State Supreme Court was requested and the court's review decision is currently pending.

The second lawsuit was filed by an individual, Patrick Reeners, of Gallatin, Tennessee on July 19, 2011 in the general sessions court of Sumner County. The suit is against the American Dental Association (ADA), and the complaint was served on the organization's President, Dr. Raymond Gist, DDS. The **charge is fraud, false advertising and willful harm**. Reeners believes the promotion of water fluoridation as "safe and effective" was never approved by the Food and Drug Administration (FDA). He believes **the ADA makes this claim while failing to recognize and fairly report on harmful cumulative contributions of fluoride from multiple non-water sources of fluoride**.

Reeners believes that fluoride is portrayed on the Association's website as a totally desirable and harmless means of preventing tooth decay. **In particular, Reeners believes that the fluoride additive is promoted as if drinking water provided an appropriate dosage, which might be true if you could control total water consumption**. However, people also ingest significant doses of fluoride from many other sources such as food, beverages, dental products, and medication. The suit alleges that the general public is ill-informed of the amounts of fluoride on or in most of these products. For example, brewed black tea reportedly tested at more than three parts per million (ppm) fluoride, three times the one ppm of fluoridated drinking water. White grape juice was reported at 2.7 ppm (EPA report #820-R-10-015 Dec. 2010, page 26).

The [third lawsuit](#) was filed on August 9th, 2011 by multiple individual plaintiffs on behalf of the general public interest. The suit was filed in the federal District Court, Southern District of California, against the Metropolitan Water District of Southern California (MWD), which serves some 17 million consumers. The suit **alleges willful misrepresentation, deceptive business practices, and infringements on the consumer's constitutional right to be free of bodily intrusion without their consent. This lawsuit challenges the MWD's claims of safely and effectively reducing tooth decay while delivering a drug that has not been approved for MWD's claims for intended use. It alleges that MWD knowingly failed to inform the public and water recipients of the drug's unapproved status or give notice of evidence of significant potential harms from hydrofluorosilicic acid, which would require a full FDA review, approval process, and notice of any contraindications**.

Plaintiffs point to the unique health effects of hydrofluorosilicic acid, which when compared to sodium fluoride, have a disproportionate toxic effect on children, and the fact that consumers are unable to prevent absorption of the chemical through their skin during baths and showers.

Water Fluoridation Injury Lawsuit Filed in Federal Court

Wednesday Sep 21st, 2011 1:38 PM

A 13-year-old's fluoride-discolored teeth was allegedly caused by drinking fluoridated bottled water since infancy. Her Mom is suing the bottlers for the cost to cover up the unsightly teeth.

Attempting to reduce tooth decay in tap water drinkers, most US public water supplies include added fluoride chemicals. And, some corporations sell fluoridated bottled water for the same reason. However, ingesting fluoride can lead to dental fluorosis – white spotted, yellow, brown and/or pitted teeth, now afflicting 41% of adolescents, according to the CDC. But according to a newly-filed lawsuit, suppliers of fluoridated water **fail to effectively warn customers that ingesting fluoride can discolor teeth.**

Nidel Law, P.L.L.C., in conjunction with Paulson and Nace, P.L.L.C., filed a case against Nestle U.S.A., Nestle Waters North America, Inc., and the Gerber Products Company, for damage caused by fluoride contained in their products marketed and sold for consumption by children under the age of eight. The Plaintiff, a 13-year old girl, suffers from dental fluorosis. **Her mother wants compensation for the costs associated with covering up her daughter's unsightly teeth, estimated to be over \$100,000 over her lifetime.** See: <http://www.nidellaw.com/blog/?p=66>

According to Nidel's website, **"The defendants in this case knew that their products contained fluoride and actively marketed these products to children and to parents for the use in their children. The defendants' failure to warn of the risk of harm from these products is unacceptable."**

According to a News Release from Georgia-based Lillie Center, "Dental industry representatives have long fretted in their professional journals that fluoride providers could one day face legal actions for harm caused by ingested fluorides...Now, after this year's admission by federal officials that fluorides are causing increasing amounts of fluorosis, an era of fluoride personal injury and toxic tort litigation appears poised to begin with the recent filing of [this] precedent-setting case in the Federal District Court in Maryland."

The complaint notes that as a baby and young child, around 90% of the water the girl consumed was fluoridated bottled water sold by the Nestle defendants. The girl's parents had purchased the water based on its advertised dental benefit for children. According to lead attorney, Washington D.C.-based Chris Nidel, the young woman's family now faces significant costs for damage-covering dental veneers. The veneers will need to be replaced four or five times, resulting in a lifetime potential cost of more than \$100,000 in dental expenses.

Attorney Nidel points to a photo of his client's teeth. "In this case, a photo really is worth a thousand words," he states. **"The water providers had a responsibility to warn their customers about fluorosis, but they did not."**

ⁱ Bassin EB, Wypij D, Davis RB, Mittleman MA. "Age-specific fluoride exposure in drinking water and osteosarcoma (United States)" *Cancer Causes Control*. 2006 May;17(4):421-8.

ⁱⁱ Cohn PD, A Brief Report Onfs The Association Of Drinking Water Fluoridation And The Incidence of Osteosarcoma Among Young Males, NJ Depart. of Health, Environ. Health Service, 1992, 1- 17

ⁱⁱⁱ Sandhu R, Lal H, Kundu ZS, Kharb S, "Serum Fluoride and Sialic Acid Levels in Osteosarcoma," *Biological Trace Element Research* Apr 24, 2009 [Epub ahead of print]