Chapter 8

Fluoride and Known Harm

Michael Connett, researcher, lawyer, and Professor Paul Connett's son, tells us that,

A chemical's toxicity can be measured in two basic ways:

1. chronic toxicity
2. acute toxicity.

Chronic toxicity refers to the dose of a chemical that, while safe, if ingested once, can cause harm if ingested over a long period of time.

Acute toxicity, by contrast, refers to the dose of a chemical that, if ingested in one sitting, can cause immediate harm (i.e., poisoning).

In the case of fluoride, early symptoms of acute fluoride poisoning include gastric pain, nausea, vomiting, and headaches. Studies have found that these symptoms are produced by a single ingestion of just 0.1 to 0.3 mg/kg (i.e. 0.1 to 0.3 mg of fluoride for every kilogram of bodyweight)

In 1980, for example, Spoerke showed that nausea, vomiting, and diarrhoea regularly occurred at dosages lower than 1 mg/kg. In 1982, Eichler showed that dosages lower than 0.5 mg/kg caused nausea, vomiting, and fatigue. In 1994, a study in the, 'New England Journal of Medicine' showed that dosages as low as 0.3 mg/kg caused nausea, vomiting, abdominal pain, diarrhoea, and headache. (Gessner 1994). And, in 1997, Akiniwa discussed a range of studies where acute fluoride toxicity occurred at dosages as low as 0.1 mg/kg. Based on the current evidence, therefore, the minimum dosage that can induce symptoms of acute fluoride toxicity appears to be 0.1 to 0.3 mg/kg.

A child weighing 10 kilograms, therefore, can suffer symptoms of acute toxicity by ingesting just 1 to 3mg of fluoride in a single sitting. This quantity of fluoride may be found in just 1 to 3gm of fluoridated toothpaste (less than 3% of the tube). (1)

Harm from low levels of fluoride absorption

Dr George Waldbott and expert in his field, said in his book on 'Health Effects of Environment Pollutants', 1973,

"Experimental and clinical data point to fluoride's adverse effect on kidneys following long-term fluoride intake in minute doses. At the level of 0.4 ppm fluoride in water, renal (kidney) impairment has been shown."(2)

Dr John Yiamouyiannis in his book, 'Fluoride the Aging Factor', 2nd Edition, published 1986, documented the findings of other experts:

1. *"The work of Dr Sheila Gibson showed that as little as 0.1 ppm of fluoride decreased the migration of human white blood cells.*"
2. *"The study of Dr Thomas L. Poulos et al, 1984, concluded that:* "*As little as two-tenths part per million of fluoride is calculated to result in a 50% bonding of fluoride to the enzyme cytochrome peroxidase. In so binding to the enzyme, fluoride would be expected to interfere with the proper utilization of oxygen."*
3. *"Collagen is a protein responsible for healthy joints and skin elasticity and stretchiness. It is in bones, muscles and blood, comprising three-quarters of your skin and a third of the protein in your body. Scientists have found that, at fluoride levels as little as 0.7 ppm, imperfect collagen or collagen-like proteins results in mineralization of tissues which should not be mineralized and vice versa. This causes calcification of the tendons and ligaments or hardening of the tendons and ligaments."* (3)

Writing in 'Frontiers in Endocrinology', August 11, 2021, scientists from New York University College of Dentistry stated that, 0.2 ppm sodium fluoride had a negative effect on calcium-based cell-signalling processes of the internal membrane system of a line of ameloblast cells grown in dishes. Ameloblast cells are cells which secrete the enamel proteins which will later mineralize to form enamel. The authors concluded,

“Exposure to a sodium fluoride solution of just 0.2 ppm has been found to disrupt the internal calcium-signalling functions of cells that produce enamel.

These data, we believe, provide a mechanism that can potentially address the biology of dental fluorosis or, at the very least, provide important information on the dental effects of fluoride in ameloblast Ca2+ physiology,”

The authors made no comment on the relevance of their finding for the regulation of fluoride in drinking water. (4)

Harm at the recommended level of 1 ppm Fluoride

In the 1939, USA Yearbook of Agriculture, it is stated that,

“It is especially important that fluorine be avoided during the period of tooth formation, that is, from birth to 12 years… this dental disease (mottling) is always found when water containing as little as 1 ppm is used continually during this period of formation of the permanent teeth.”

Kaj Roholm, the expert on fluoride, whose work has been detailed in Chapter 5, found that at 1 ppm fluoride in drinking water, children developed mottled teeth. Roholm called for the cessation of therapeutic fluoride compound use for children.

Fluoride is known to interfere with biochemical functions at low doses. (5)

Kalei et al (2012), found that:

“The fluorosed enamel crystal demonstrated voids in the centres of their crystal, indicating that there is no safe level of fluoride.”

Dr George Waldbott in his book, ‘Fluoridation and the Great Dilemma’ published in 1978, points to high and low level fluoride exposure, (both from natural calcium fluoride and from the waste product hydrofluorosilicic acid), having adverse health outcomes. Low levels are what Public Health Authorities call ‘optimal’ levels, which is 1 ppm of fluoride; this translates to 1mg of fluoride in a litre of water. Waldbott reports urticaria (a skin reaction that causes itchy welts) and dermatitis among other outcomes. He established the causal relationship of these diseases to fluoride ‘by single-blind and double-blind tests’. (6)

In the late 1940s, Dr Reuben Feltman, a researcher at the Passaic Hospital in New Jersey, conducted an experiment to determine the effects on 672 pregnant women and young children of ingesting sodium fluoride tablets. He started the study at his own expense and then received funding from the US Public Health Service (PHS). In the study the dose administered was 1mg, which corresponds to a litre of fluoridated water at 1 ppm. The study was designed to last 10 years but when early results, in 1956, showed that patients were experiencing side-effects, the study was terminated and remained unpublished. It was then quietly ‘buried’.

In 1961, however, together with colleague George Kosel, Feltman published a final report on this work, in which they stated:

“One percent of our cases reacted adversely to the fluoride (1mg/day) tablets.”

They noted adverse symptoms were atopic dermatitis, urticaria, epigastric distress, emesis (vomiting) and headaches. (7)

Dr E. Epstein encountered a case of general dermatitis in one of 20 patients with acne to whom he administered 1mg of fluoride per day for one to 11 weeks. (8)

Gerald F. Judd states in his book, ‘Good Teeth Birth to Death’, that:

"Fluoride at low levels has been shown to unsnap hydrogen bonds in the enzyme cytochrome oxidase and, thus, ruins its ability to handle oxygen in humans, animals or plants".

Dr John Yiamouyiannis concluded from his extensive research and recorded in this book, 'Fluoride, the Aging Factor' 2nd edition pub. 1986, that:

"The consumption of water containing 1 ppm fluoride leads to a situation in which the ability of the body to properly dispose of foreign agents in the blood is retarded. Fluoride at 1 ppm.
1. Slows down the movement of white blood cells.
2. Interferes with phagocytosis (the ingestion of bacteria or other material by phagocytes and amoeboid protozoans).
3. Induces the release of superoxide free radicals… The low levels at which fluoride exerts its deleterious effects indicates that there may be no safe level of fluoride". (Superoxide may contribute to many diseases and also to aging via the oxidative damage that it inflicts on cells)".

Dr Moolenburg in his book 'Fluoride the Freedom Fight' published in 1987, recorded events of harm from fluoridated water at 1 ppm. He, along with colleagues, conducted double-blind tests to confirm their findings. In conclusion, he states:

"The victims of fluoridation at 1 ppm showed that poisoning was present. They showed that a whole population was imbibing a slow-acting poison and that allergy patients were often the first to have side effects."
The symptoms Moolenburg described were,
1. Small, very painful sores in the mouth.
2. Laboured breath in babies and children, asthmatic condition.
3. Itchy rashes all over the body or weepy eczema.
4. Nagging pains in the stomach.
5. Colicky type pains in the stomach and some like acute appendicitis.
6. Babies and children yelling and screaming at night.

When fluoride exposure stopped, these unpleasant conditions improved after two or three weeks. It was poisoning, rather than allergy, that Dr Moolenburgh and his colleagues were seeing. They were absolutely convinced that fluoride lowers the resistance of people against sickness, especially in relation to the immune system.

Prof Paul Connett at www.fluoridealert.org has collected evidence of harm on the brain, and a drop in IQ levels in children when their mothers, while pregnant with them, ingested levels of fluoride equivalent to the levels used in water fluoridation at 0.7 ppm. Below are some recent robust studies:

Green (2019). Largest study with 512 mother-offspring. Lower IQ in children 3-4 years of age.

Bashash (2017). Longest study. 299 mother-offspring pairs in Mexico. Lower IQ in children 4 and 6-12 years of age.

Thomas (2018). 401 mother-offspring pairs in Mexico. Lower IQ in children 1-3 years of age Only the abstract has been published.

Valdez Jiménez (2017). Lower IQ between the ages of 3-15 months with 65 mother-offspring pairs in Mexico.

Li (2004). Significant differences in the neonatal behavioural neurological assessment score in 91 offspring aged 1-3 days old.

Till (2020). This study found a large reduction in children's IQ when as infants they were bottle-fed in communities which were fluoridated compared to children who when as infants were bottle-fed in non-fluoridated communities. (9)

In the USA and Canada, pregnant women living in fluoridated communities had urine fluoride levels ranging from 0.8 to 1.0 ppm, meaning (since this is a linear relationship) that their offspring had the potential to lose four to five IQ points.
Professor Paul Connett said,

"In a country with water fluoridation, a drop in five IQ points, would halve the number of very bright children (IQ >130) and increase by over 50% those who need special care (IQ<70). Both changes have serious economic and social consequences for a country."

According to Professor Philippe Grandjean (Harvard School of Public Health), and Bruce Lanphear the IQ loss in fluoridated communities is substantial. Their risk assessment for fluoride, June 2021, is based upon the new mother-offspring IQ studies, (10) and found that,

"0.2 ppm of fluoride in a pregnant mother's urine was all it took to lower her offspring's IQ by one IQ point".

Their study called, 'A benchmark dose analysis for maternal pregnancy urine-fluoride and IQ in children – Risk Analysis, in press,' was co-authored with others.

Philippe Grandjean and Bruce Lanphear determined that fluoride levels in water at only 0.2 ppm could lower IQs in children through ingestion from their mothers while pregnant.
The authors concluded,

"Given the ubiquity of fluoride exposure, the population impact of adverse effects from fluoride may be even greater than for other toxic elements like lead, mercury and arsenic."

(Dr Philippe Grandjean worked to prove the dangers of mercury exposure and of lead exposure before that. Dr Bruce Lanphear was also involved in the lead toxicity studies and is well-known in the environmental science community for authoring seminal research on the neurotoxicity of low-level lead. His blood lead research, funded by the National Institutes of Health (NIH), was cited by the EPA as the critical study upon which the agency based the current national air standard for lead. Lanphear also worked with Till on the Canadian fluoridation study) (11)

At the point of writing, England only has 10% of the population, that have artificial fluoride added to their water supply but Paul Connett said that as:

"England fluoridates, in those areas, at 1 ppm (compared to 0.7 ppm in US) and that

*the English are big tea-drinkers, another big source of fluoride (*see Declan Waugh's work)…*the effects of water fluoridation on children's IQ will be worse".* (12)

It is worrying, that in the author's town, non-fluoridated Bedford, in the UK, the background level for fluoride is approximately 0.28 ppm, slightly higher than the Benchmark Dose of 0.2ppm.

The background fluoride concentration in drinking water in non-fluoridated Europe often ranges around 0.5mg/L and is, therefore, higher than the Benchmark Dose level of 0.2mg/L.

Author's note: From the above, it would seem that it would be advisable for people, especially pregnant women, where background natural fluoride levels are at this level or above, to consider using alternative water supplies or a reverse osmosis system to remove this excess fluoride.

An animal research article published in August 2018, found the following:

"After ingestion, fluoride is absorbed from the gastrointestinal tract, circulates in the organism and is taken up mainly by mineralized tissues and to a lower extent by soft tissues. The remaining amount is excreted mainly in the urine. After 10 minutes from the fluoride absorption, the plasmatic concentration increases, reaching the maximum peak at 60 minutes. The return to base line is achieved within 11-15 hours; then, fluoride is rapidly deposited in the skeleton or excreted by the kidneys… Alteration in oxidative parameters can be detected in individuals exposed to compounds, even at low doses, and can distinguish them from individuals not exposed to these compounds or their metabolites… After the fluoride reaches the systemic blood circulation, multiple organs are affected by exposure to the substance… This study is aimed at assessing the effect of fluoride exposure in levels similar to the ones found in areas of artificial fluoridation and in areas of endemic fluorosis in blood oxidative processes, investigating that even small concentrations

can trigger mechanisms that damage the body… We strongly believe that, as the fluoride concentration increases, more antioxidant enzymes are impaired." (13)

Some children and some adults can be highly sensitive to fluoride. Audrey, a mother of an autistic son who is highly sensitive to fluoride, has written about her experiences in Appendix 1,d.

Harm from high levels of calcium fluoride

Well water, with high natural calcium fluoride (CaF2), has resulted in crippling skeletal fluorosis in India, China and Africa. See four pictures from India, 1997, Appendix 2, e, where,
"When large doses of fluoride are ingested without concomitant calcium supplementation, osteomalacia (bone softening) ensues, bones become soft rather than brittle, causing the severe crippling skeletal fluorosis," as shown in these pictures. (14)

Scientists in China have demonstrated that sodium fluoride exposure induces,

"anxiety– and depression-like behaviours in juvenile [Sprague-Dawley] rats, resulting in histological and ultrastructural abnormalities in the rat hippocampus and medial prefrontal cortex."

These researchers from Zhengzhou University, in 2020, reported an association between increased urinary fluoride and an increase in psychosomatic problems in children, found that sodium fluoride increased the production of a particular enzyme in the hippocampus that has previously been associated with the onset of depression.

Their report, published in the American Chemical Society's Journal of Agricultural and Food Chemistry, October 20, 2021, suggests that high levels of fluoride will perturb cell signalling pathways associated with this enzyme, SIK2, leading to the death of nerve cells, and the development of psychosomatic problems. (15)

The synergistic effect of fluoride

Fluoride is a poison of itself but also acts to enhance the effects of other toxins. Schubert showed in a series of experiments this effect in 1978. Dr David Kennedy, the scientific dentist, explains this synergistic effect below;

"If you take enough mercury to kill one out of 100 rats one out of a 100 rats dies. And if you took enough lead to kill one out of a hundred rats and diluted it by 20 fold none of the rats died. But if you added to that small amount of lead an infinitesimal amount of mercury, you killed all the rats. That makes mercury and lead together hugely synergistic. Well when you (put) silicon fluoride in the water supply you are giving them lead and when you are giving the baby vaccines with mercury in them like the flu vaccines you are giving them mercury. That is not a good idea". (16)

David Kennedy reminds us in his book - 'How To Save Your Teeth', published 1993,

"And remember when toothpaste tubes stayed rolled up? Many of those tubes contain lead which the toothpaste absorb and this give you an additional daily dose of lead (and fluoride) every time you brush (your teeth)." (Toothpaste tubes can also be lined with aluminium which could or may combine with the fluoride to make another toxic compound which allows the aluminium to be more easily transported into the brain). Author's comment in parentheses.

This same reaction, fluoride combining with aluminium, can happen in areas where there is water fluoridation and if aluminium cookware is used. The fluoride in the water will combine with some of the aluminium in the pots or pans and this new compound then allows the aluminium to be more easily transported into the brain. It is best for everyone to avoid using aluminium cookware as aluminium in the brain has been found to increase the incidents of Alzheimer's disease.

This same reaction between aluminium and fluoride may take place when water companies fluoridate the water and if they add aluminium sulphate, to make the water sparkle.

If fluoride is in the blood of a child at the time of a vaccination, its presence could initiate or intensify an adverse reaction. Elevated fluoride levels in the blood immediately prior to a vaccine could be caused by:

drinking fluoridated water, cleaning teeth with fluoridated toothpaste, eating foods such as grapes which have been routinely sprayed with fluoridated pesticides or eating foods processed in a fluoridated area. In the last twenty years many vaccines have had either a mercury or an aluminium additive.

Theo Colborn, Dianne Dumanoski and John Peterson Myers, in their book, “Our Stolen Future”, published, 1996, state:

“individual chemicals can have a major cumulative effect”.

As an example they mention in their book, Anna Soto and Carlos Sonnenschein’s experiment with breast cancer cells in culture.

“When breast cancer cells were exposed ….. to a small amount of a chemical known to encourage breast cancer nothing happened but when this same small amount was made up of a small amount of ten chemicals known to encourage cancer growth there was pronounced proliferation and growth of cancer.”

In the town of Corby in Northamptonshire, UK, there was a synergistic effect of chemicals in the environment which proved to be devastating. Dust, containing toxic chemicals, cadmium, cyanide, mercury, lead, dioxins, and fluoride settled everywhere when the Steelworks was being dismantled, because proper procedures were not followed. Pregnant women, living a mile away from the works, at that time, breathed this toxic soup which led to toxins going into their babies’ blood stream. Many of these babies were born with birth defects, one child had deformed hands. (17)

Ruth’s story told in Appendix1, (f), also demonstrates this synergistic effect of toxic chemicals.

Ways to help the body heal from fluoride poisoning

Dr George Waldbott, in the USA found that his patients with painful symptoms from fluoridated water quickly improved by using distilled water for drinking or cooking, often after 4 to 6 weeks. Waldbott was able to confirm this by patients who were willing to re-expose themselves to fluoride. (18)

Dr Han Moolenburgh, in Holland, discovered that allergic type symptoms, caused by ingesting fluoridated water, disappeared within three weeks after fluoridated water was eliminated and replaced with non-fluoridated water, spring water, distilled water or reversed osmosis filtered water. He was able to confirm this result by double-blind studies.

Professor A. K. Susheela, in India, found that people suffering from fluoride poisoning improved, once all known sources of fluoride was removed. The addition of a good diet, supplying essential nutrients, vitamins, and antioxidants, was required to combat fluorides toxicity. With such interventions the non-skeletal symptoms were likely to subside within a fortnight. The symptoms abated in this order; non-ulcer dyspeptic complaints (stomach pain of unknown cause), increased urination (polyuria), increased drinking (polydipsia), muscle weakness, and fatigue. She noted that joint pain was usually the slowest to disappear, but experiencing much less pain in the joints was likely to occur.

See chapter 18, for more suggestions on ways to heal the body.

Chapter 8 References

(1) (FAN website, www.fluoridealert.org – April 2012, Michael Connett.)

(2) (Ref: Juncos L.I,. Donadio J.V. ‘Renal failure and Fuorosis, Fluorine and Dental Health’, J. Am Med Assoc 1972; 222 (7): 783-785).

(3) (Dr A Singh and Dr S.S. Joly; Dr I Amala er al 1985; Dr A.F. Aksyuk and G.V. Bulychev).

(4) (Ref: https://www.frontiersin.org/articles/10.3389/fendo.2021.730913/full).

(5) (Ref: Barbier et al 2010).

(6) (Ref: ‘Allergy to Fluoride’ July 1967; vol. 25; pages 388–391).

(7) (Ref: ‘Allergy to Fluoride’ July 1967; vol. 25; Pages 388-391).

(8) (Ref: ‘Allergy to Fluoride’ July 1967; vol. 25; pages 388–391).

(9) (Source: http://fluoridealert.org/issues/moms2b/mother–offspring–studies.)

(10) (Bashash 2017,2019; Green 2019; Riddell 2019 and Till 2020).

(11) (Ref: The Fluoridation Record, July 2021, Mike Dolan, editor).

(12) (Source: Paul Connett e-mail, Aug 2021).

(13) (Ref: 'Chronic Exposure to Sodium Fluoride Triggers Oxidative Biochemistry Misbalance in Mice: Effects on Peripheral Blood Circulation', researchers Giza Hellen Nonato Miranda et al.)

(14) (Ref: Dr Waldbott, Page 157 in his book, 'Health Effects of Environmental Pollutants').

(15) (Ref: https://doi.org/10.1021/acs.jafc.1c04907).

(16) (Ref: David Kennedy DDS in his 1 min video:- /www.youtube.com/watch?v=j7e69VcvrU8).

(17) (BBC Documentary "Toxic Town: The Corby Poisonings" Broadcast 23.3.20 - breathing polluted air meant that a toxic mix of chemicals could enter the body).

(18) (Source: 'Fluoridation the Great Dilemma by George Waldbott)