Chapter 6

Topical fluoride

It has been mentioned in the previous chapter that fluoride was originally added to toothpaste so that the general public would view fluoride as being beneficial. It was hoped, by those wanting to introduce fluoride into public water supplies, that fluoride's,'good image', would enable them to do this more easily, without public resistance. This scheme was so successful that later other topical products appeared with added fluoride, however, this was not without some strong resistance from dentists, doctors and scientists.

Topical fluoride products, includes toothpaste, varnish treatment, gels, and mouthwashes/rinses and are not supposed to be swallowed, ingested or absorbed by the body but this ignores the great ability of the body to absorb substances through the mouth cavity via the gums, cheeks and from under the tongue.

The knowledge that topical fluoride does not stay topical has been hidden from the public for a long time. This was partly because of the propaganda campaign orchestrated by Oscar Ewing. Ewing was previously a lawyer for the Aluminium Company of America (Alcoa) and in 1948, as Public Health Service (PHS) administrator in the US, allocated $1 million dollars for a nationwide demonstration for the efficacy of topical fluoride applications, consequently such studies started to appear and influence public perception.

However, there were grave doubts about topical fluoride use and warnings of danger to gum tissues and dentinal tubules soon began to appear. By 1977, the American Association for the Advancement of Science, pointed out that:

"There should be continuing concern and control with fluorides in all forms that are now becoming individually administered for home care (tablets, mouthwash, gels, toothpaste, etc.). The high concentration of some products may be neither biologically desirable nor clinically necessary".

According to the New York State Bureau of Dental Health Service, topical fluoride was practically ineffective in reducing tooth decay.

"Fluoride damages by means of enzyme disruption, collagen breakdown, genetic damage and/or disruption of the immune system." *(1)*

In 1984, the International Academy of Oral Medicine and Toxicology (IAOMT), founded by Murray Vimy and Michael Ziff, maintained that topical fluoride was ineffective and did not have the potential to remineralise or rectify the damage to the teeth due to caries.

The Meetinghouse Dental Care in the USA states the following on their website:

"*Topically applied fluoride in toothpaste or in professional fluoride varnishes/gels binds to calcium in the saliva, displacing the phosphate mineral normally found in a healthy enamel wall (Hydroxyapatite), and forms a new structure on the outside of the teeth. While the fluoride shell may sound beneficial, it is like putting a false fingernail overtop of a damaged nail instead of addressing the actual problem. Fluoride does not heal or remineralize enamel. On the contrary, the fluoride force field prevents absorption of minerals, making enamel weaker and more susceptible to decay in the long run.*"

"Topically applied fluoride will decrease sensitivity from hot and cold. It will also poison invading oral bacteria (beneficial bacteria as well as decay-causing bacteria) for 30 minutes after application, temporarily stopping harmful acid production. The effect is severely limited though; after 30 minutes, new bacteria of all types repopulate the oral environment."

The History of fluoridated toothpaste, where it comes from and concerns over its use.

The fluoride in toothpaste is either sodium fluoride, stannous fluoride or sodium monofluorophosphate at a dose ranging from 1000 ppm to 1500ppm, and comes in toothpaste tubes usually lined with aluminium.

Stannous fluoride is usually considered too expensive. The stannous fluoride, a white crystalline compound, is produced commercially as a reaction of hydrogen fluoride with tin and as tin can sometime be expensive this is now rarely used in toothpaste.

Sodium fluoride is produced,

1) directly from fluorspar, the name used for fluorite when sold as a bulk material or in processed form. Fluorspar is sold in three different grades, acid, ceramic and metallurgical. Acid grade fluorspar is a highly-purity material used by the chemical industry. The hydrogen fluoride (hydrofluoric acid), is derived from the fluorspar by reacting sulphuric acid with chemical grade fluorspar. This acid is then neutralized with caustic soda (sodium hydroxide) and dried to form a powder and renamed sodium fluoride.
2) As a by product/waste from cryolite during the manufacturing of aluminium. Cryolite is sodium aluminium fluoride, and when the aluminium is extracted that which is left is sodium fluoride.
3) from a waste product, hydrofluorosilicic acid from the phosphate fertilizer industry. Soda ash (sodium carbonate) or caustic soda (sodium hydroxide) is added to neutralize the toxic waste and the resulting mix is then dried into a powder and called sodium fluoride.

It is the sodium fluoride made directly from fluorspar that is used to add to adult toothpaste.

Sodium monofluorophosphate, usually used in children's toothpaste, is a fusion of sodium fluoride and sodium metaphosphate. To form sodium monofluorophosphate, sodium metaphosphate is combined with sodium fluoride. The sodium metaphosphate is a result of reacting phosphoric acid (from phosphoric rock) with sodium hydroxide (from brine). The sodium fluoride is from hydrogen fluoride (derived from fluorspar) which has been neutralized with sodium hydroxide. (2)

But as early as 1935**,** the American Dental Association objected to fluoride being added to toothpaste stating that:-

"*Fluoride is a general protoplasmic poison, but the most important symptom of chronic fluorine poisoning known at present are mottling of teeth (dental fluorosis) and interference with bone formation".*

In February 1937 the Journal of the American Dental Association again reported that:-

"The inclusion of sodium fluoride in toothpaste is irrational and should be discouraged….
Fluorine is not an element in tooth structure….A rational scientific basis for the use of sodium fluoride in toothpaste does not exist. The local absorption of the fluoride might be promoted by massaging of the gums with the aid of a toothbrush and by the presence of pathological conditions such as ulcers, inflammatory states, pus pockets and the like, in other words uncontrolled usage of the product might result in undesirable systemic reactions especially in children….
Fluoride does not leave (the body). Many people are misdiagnosed with arthritis are actually suffering from fluoride poisoning….
Use of the product (fluoridated toothpaste) may result in undesirable systemic reactions, especially in children…
The use of fluoride in dentifrices (toothpaste) is unscientific and irrational and therefore should not be permitted". (3)

This was further emphasised on September 18th 1943, this time by the Journal of the American Medical Association, that said:-

"Fluorides are general protoplasmic poisons, with the capacity to modify cell metabolism, changing the permeability of the cell membrane by inhibiting certain enzymes. Sources of fluoride intoxication include drinking water containing 1ppm or more fluorine".

And on 1st of October 1944 The American Dental Assoc. Journal re- enforces its message by stating,

"The use of drinking water containing as little as 1.2 – 3ppm of fluoride will cause such developmental disturbances in bones as osteosclerosis, spondylosis and osteoporosis, as well as goitre and we cannot afford the risk of producing such serious systemic disturbances in applying what is at present a doubtful procedure intended to prevent disfigurement among children. In the light of our knowledge or lack of knowledge, chemistry on the subject of fluorine, the potentialities of harm outweigh those of good".

Even in the year 1950, The United States Dispensatory, 24th Edition (1950), on pages 1456-57 stated the following:-
"…… *Fluorides are violent poisons to all living tissue because of their precipitation of calcium. They cause fall of blood pressure, respiratory failure, and general paralysis. Continuous ingestion of non-fatal doses causes permanent inhibition of growth'. 'Chemists agree that the element fluorine, head of the halogen*

group, is the most electro-negative of all elements, will combine with almost all elements to form various compounds and that its greatest affinity is for calcium".

However, in spite of all these warnings, fluoride was officially added to toothpaste in the 1950s because it was claimed by the toothpaste manufacturers that fluoride was beneficial to teeth.

But just how was it possible for fluoride's image to change so quickly - change from being poisonous to being something beneficial so that it could be added to toothpaste? This big 'change around' happened because of Edward Bernays who orchestrated the introduction of fluoride into toothpaste for the benefit of big corporations. To discover just how, read Christopher Bryson's book 'Fluoride Deception'.

Problems soon started to be recorded after fluoridated toothpaste was introduced. As early as 1957, there were reports that fluoridated toothpaste caused problems in the mouth; soreness, gum bleeding, rashes, ulcers, pimples, that were noted by Thomas Douglas, MD. (4)

Other reports soon followed;
1) J.J. Shea et al "Allergy to Fluoride", Annals of Allergy 25 (1967): 388-91);
2) M.A.Saunders. "Fluoride Toothpaste: A Cause of Acne-Like Eruptions", (letter), Archives of Dermatology 111 (1975): 793;
3) M.A. Saunders, "Fluoride Toothpaste as a Cause of Acne-Like Eruptions" (letter in reply to Ervin Epstein's letter), Archives of Dermatology 112 (1978): 1033-34);
4) J.R. Mellette, J.L. Aeling, and D.D. Nuss, "Fluoride Tooth Paste: A Cause of Perioral Dermatitis" (letter), Archives of Dermatology 112 (1976): 730-31;
5) J.R. Mellette et al "Perioral Dermatitis" Journal of the Association of Military Dermatology 9 (1983): 3-8.
6) Dr George Waldbott, 'Fluoridation the Great Dilemma', page 167.

Significant amounts of fluoride are either ingested or absorbed from fluoridated toothpaste and mouthwashes. When these items are placed in the mouth, the fluoride starts to be absorbed within seconds, directly through the skin of the tongue, from under the tongue and cheeks. Sodium Laurel Sulphate (SLS) added to toothpaste increases the absorption rate. The 1980 study by led b J. Ekstrand reported that;

"The bioavailability, the ability of the body to absorb into the tissues from different types of fluoride compounds range from 85% to 100% in man NaF". (5)

A 1988 study found that toothpaste can double the level of fluoride in the blood within five minutes of being used. The authors of this study said:-

"Toothpaste has to be examined as an alarming high source of fluoride in our daily exposure, especially in children." (6)

David Kennedy also reports, that when fluoridated toothpaste is used or a dentist does a topical fluoride treatment in a dental surgery, the patient's blood level of fluoride goes up. (7)

Fluoride in toothpaste at 1100ppm enters the blood within five minutes of brushing in children aged 10-14. Fluoride blood serum blood levels increased consistently from the 1st to the 9th day of testing despite using the same amount of toothpaste every day, suggesting that even when the toothpaste is not swallowed, fluoride accumulates in the body with repeated topical exposure. (8)

Young infants and children below the age of 3 years have an undeveloped swallowing/spitting reflex so all toothpaste is swallowed. Even older children will swallow 50% of toothpaste and others, liking the flavour, will swallow more. (9)

Dean Murphy DDS in his book, 'The Devil's Poison – how fluoride is killing you!' published 2008, states:

"Many studies have shown that in children brushing their teeth (younger than 6 years old) tend to swallow nearly all of the applied toothpaste."

The three studies that D. Murphy lists to prove this fact are -
1) Hargraves, J. A. Ingram, G. S. Waff, B. G. A gravimetric study of the ingestion of toothpaste by children. Caries Research. 6: 237- 243

2) Barnhart, W. E. Hillier, L. K. Leonard, G. J. Michael, S. E. Dentifrice usage and ingestion among four age

groups. Journal of Dental Research 1974. 53 1317-1322 .

3) Dowell, T. B. The use of toothpaste in infancy. Br. Dental Journal 1981 150 247-249 .

Ericson and Forsman's study of, 1969, found that 25 to 33% of the toothpaste was ingested even in supervised brushing with children aged 4 to 7 years. (10)

From these studies, it can be concluded that when a child is brushing with a 1% fluoridated toothpaste twice a day, his daily ingestion of fluoride would be 0.5 mg with nearly complete absorption, primarily through the mouth and stomach….. With fluoride being an accumulated ion in the body, years of ingestion would eventually lead to very high levels in soft tissue and the skeletal system. (11)

FAN's website at www.fluoridealert.org, explains the following -
"Early symptoms of fluoride poisoning include gastrointestinal pain, nausea, vomiting, and headaches. The minimum dose that can produce these symptoms is estimated to be 0.1 to 0.3 mg/kg of fluoride (i.e., 0.1 to 0.3 milligrams of fluoride for every kilogram of bodyweight). A child weighing 10 kilograms, therefore, can suffer symptoms of acute toxicity by ingesting just 1 to 3 milligrams of fluoride in a single sitting.
As demonstrated in the table, 1 to 3 mgs of fluoride is found in just 1 to 3 grams of toothpaste (less than 3% of the tube) — including toothpaste that is marketed specifically to children with bubble-gum and fruit flavours."

Amount of Bubblegum-flavoured "Colgate for Kids" Toothpaste Capable of Causing Acute Toxicity

Age of Child	Average Weight*	Milligrams of Fluoride Capable of Producing Symptoms	Grams of Ingested Toothpaste	Percent of Toothpaste Volume
2 years	~12 kg	1.2 – 3.6 mg	1.1 – 3.3 g	0.8 – 2.5%
3 years	~15 kg	1.5 – 4.5 mg	1.4 – 4.1 g	1.0 – 3.1%
4 years	~16 kg	1.6 – 4.8 mg	1.5 – 4.4 g	1.1 – 3.4%
5 years	~ 18 kg	1.8 – 5.4 mg	1.6 – 4.9 g	1.3 – 3.8%
6 years	~20 kg	2.0 – 6.0 mg	1.8 – 5.5 g	1.4 – 4.2%
7 years	~22 kg	2.2 – 6.6 mg	2.0 – 6.0 g	1.5 – 4.6%
8 years	~25 kg	2.5 – 7.5 mg	2.3 – 6.8 g	1.7 – 5.2%
9 years	~28 kg	2.8 – 8.4 mg	2.5 – 7.6 g	2.0 – 5.9%

*Average weight data obtained here
** The fluoride concentration in Colgate for Kids toothpaste is 1,100 ppm. At 130 grams of paste in the average tube, this equals 143 milligrams of fluoride. Source: FAN's website www.fluoridealert.org

"Because the symptoms of acute fluoride toxicity mimic other, common ailments (e.g., upset stomach, nausea, flu), there are undoubtedly countless incidents of fluoride poisoning that routinely go undiagnosed. As noted in the Journal of Public Health Dentistry:"

"Estimating the incidence of toxic fluoride exposures nationwide also is complicated by the existence of biases. Parents or caregivers may not notice the symptoms associated with mild fluoride toxicity or may attribute them to colic or gastroenteritis, particularly if they did not see the child ingest fluoride. Similarly, because of the non-specific nature of mild to moderate symptoms, a physician's differential diagnosis is unlikely to include fluoride toxicity without a history of fluoride ingestion." (12)

Dr John Yiamouyiannis in his book 'Fluoride, The Ageing Factor', confirms that a 10 pound (4 and a half kilograms) infant could be killed by 1/100 of an ounce (0.3 gms) of fluoride and a 100 pound (45 Kilograms or 7 stone) adult could be killed by a 1/10 of an ounce (3 grams).

So a child weighing 10 kilograms, ingesting 3% of fluoridated toothpaste (i.e. 1-3 gms of fluoride) marketed specifically for children with bubble gum and fruit flavours can suffer symptoms of acute toxicity, poisoning, showing gastric pain, nausea, vomiting and headaches. (13)
1 - 3 grams of toothpaste = 1 - 3 mgs of fluoride

Whiteford concluded in his study of 1987 that:-

"A single tube of bubble gum flavoured Colgate-for-kids toothpaste contains enough fluoride (143mg) to kill a child weighing less than 30 Kg".

A single strip of toothpaste covering the length of a child's brush contains 0.75 to 1.5 mg of fluoride. This exceeds the amount in most prescription fluoride supplements (0.25 to 1.0 mg). In the USA it is now recommended that only a "pea-sized amount" or (even a smear) should be used. Children, unsupervised will use more than this and those supervised will still swallow most if not all of the toothpaste.

Another source suggests,
"It is fairly difficult for a child to consume a lethal dose of fluoride at home as a pea-sized amount of toothpaste has about 0.24 milligrams of fluoride about the same as a glass of fluoridated tap water. According to the Columbia University College of Dental Medicine, the lethal dose for an 8-year old child weighing 45 pound is 655 milligrams. A child would have to consume more than four tubes of toothpaste to reach this level. For a 2-year-old, 22-pound child, the lethal dose is 320 milligrams, or more than two full tubes of toothpaste".

And continues,
"Of course, not all pastes are created equal. Most toothpaste contains contains between 1,000and 1,500 part per million fluoride (ppm) [source:Wagner]. A standard 4.5-ounce tube of Colgate for Kids, at 1.100ppm contains 143 milligrams of fluoride [source: Fluoride Action network]. A 2-ounce tube of prescription ControlRX, at 5,000 ppm contains 282 milligrammes of fluoride, a nearly-lethal dose for a 2-year old [source: NIH]. Parents should take extra are to lock up these prescription dental products, as well as any fluoride supplements, which can easily contain enough fluoride to kill a child. (But) even doses as low as 0.1 milligrams of fluoride per kilogram of body weight ….can still cause acute poisoning symptoms, ranging from nausea to headaches. A 22-pound child (of about 2 years old) can suffer from fluoride poisoning at doses as low as 1 milligram, while a 45-pound child (of about 8-years) would need to ingest 2 milligrams to experience similar symptoms. A single teaspoon of children's toothpaste contains about 5 milligrams of fluoride, making it more important than ever for parents to limit access to this product." (14)

From FAN's website, www.fluoridealert.org, we learn that,
"The minimum dose of fluoride that can kill a human being is currently estimated to be 5 mg/kg (5 milligrams of fluoride for each kilogram of body weight). This dose is referred to in the medical literature as the "Probable Toxic Dose" or "PTD." The dose is sufficient to cause severe poisoning, and in the absence of medical treatment, can be lethal. As noted by Dr. Gary Whitford in 1987, the PTD is the "minimum dose that could cause toxic signs and symptoms, including death, and that should trigger immediate therapeutic intervention and hospitalization."
Therefore, if a teaspoon of fluoridated toothpaste contains 5 milligrams of fluoride, and 5 milligrams per Kilogram of body weight is the PTD, a 7 stone adult (45 Kg or 100 pounds) would have to ingest two and a half tubes of the large sized tubes of fluoridated toothpaste (100 milligram size as it contains 20 teaspoons) to be a lethal dose, for a 14 stone adult it would be 5 tubes.

In 2015, on 10th January, Allison Gaines et al reported in the American Journal of Clinical Pathology, the death of an adult who died due to the ingestion of fluoridated toothpaste. (15)

Graham Layton DDS 2 min video clip advises not to brush with fluoridated toothpaste, here is a transcript -

"What's so bad about fluoride? It's in toothpaste and often in water so what's so wrong about fluoride? Well, it turns out that fluoride is a very toxic element. It's toxic to the body, it's toxic to the brain, it's toxic to body growth, to healing. It interferes with growth and development. That's why if you get too much fluoride in your diet your children will have white spots on their teeth, white spots and brown spots that is because the tooth couldn't develop well and the same thing happens to the cartilage in your body that needs to heal and grow. Even more disturbing – we are finding from the results of population studies that fluoride reduces I.Q. in children. It is a very serious problem to introduce fluoride into the human body. It's not supposed to be there. There is no minimum daily requirement for fluoride and it's very poisonous.

"There is enough fluoride in a tube of toothpaste to kill a small child. Anything children put in their mouths, they swallow it so you send your child to brush their teeth and you know they are going to swallow that fluoride on the toothbrush. And later they may complain to mummy – 'I have tummy ache, my tummy hurts'. You say 'go to bed'. It is possible that that fluoride is mixing with the hydrochloric acid in their stomach and it turns to hydrofluoric acid which is very nasty and your child really does have a stomach ache and he has

poisoned himself with the toothpaste because he swallowed it."

"You may have noticed that on the back of a toothpaste tube it says – if any more than a size of a pea is swallowed call your poison control. Well – that's a serious message, and it should be taken seriously. So I would encourage you not to have your children brush their teeth with fluoridated toothpaste for their health and well-being." *(16)*

Parents or caregivers may not notice the symptoms associated with the mild fluoride toxicity or may attribute them to colic or gastroenteritis, particularly if they did not see the child ingest the toothpaste. Similarly, a physician is unlikely to understand.(17)

Dr John Yiamouyiannia, in this book, 'Fluoride the Aging Factor', reports the experience of many doctors who have found allergic type systems from fluoride exposure, one doctor is,

Dr John J. Shea of Dayton, Ohio who relates his experience:

"Mr E.H., aged 48, consulted… {me} because of giant urticaria [itchy red skin eruptions] of one month's duration. The lesions involved mainly hands and feet and, at times, the entire body surface. At the first visit the lips and gums showed a marked oedema [swelling]. The lesions usually occurred about one hour after breakfast. At that time, he was using fluoride toothpaste. He was asked to discontinue the fluoride toothpaste and not to take any medication. Three days later he reported having had only a single hive and slight residual pruritus [itching]. Six days later, he was completely free of symptoms. Three years later, this patient experienced another episode of generalised urticaria. In the morning he had inadvertently brushed his teeth with a toothpaste used by his family without realising that it was a fluoride brand. The hives appeared within one hour of its use."

In the 'ANNALS OF ALLERGY', July 1967: Volume 25; there is an article called, Allergy to fluoride, by J. J. SHEA, M.D., F.A.C.A. S. M. GILLESPIE, M.D. G. L. WALDBOTT, M.D. on Pages 388-391,

In this article, Dr T. E. Douglas' account is quoted as follows:-

"stomatitis in 133 cases due to fluoride-containing toothpaste. The patients' ages ranged from two and a half to 92 years. They included a family of six and another of four, every member of which was adversely affected by fluoride toothpaste. Several of these patients had gastrointestinal disturbances. The ulcers in the mouth did not respond to antibiotics or to local medication, but cleared up promptly when a non-fluoride toothpaste was used. In 32 patients, Douglas reproduced the stomatitis by reapplying the fluoridated toothpaste – in some cases as often as six times."

In the Fluoride magazine 1993 Vol 26; pages 267-273 there is an article called 'Allergy and Hypersensitivity to fluoride' by Bruce Spittle M.D. Department of Psycological Medicine, School of Medicine, Unversity of Otago, Dunedin, New Zealand. This article goes more deeply into this subject.

Three end notes worthy of consideration;

1) Due to the corrosive nature of fluoride, the fluoride in toothpaste may slowly corrode the metal in amalgam tooth fillings especially when people are asked to leave the toothpaste in the mouth for 5 minutes.

2)) Fluoride can also corrode aluminium. When the fluoridated toothpaste comes in toothpaste tubes lined with aluminium, the fluoride may react with the aluminium causing a chemical reaction. If this should happen then the newly created fluoride aluminium compound within the toothpaste, when cleaning teeth, could be absorbed through the mucous membrane of the mouth, and enter the brain more easily.

3) Is sodium fluoride released from the binding effect of the toothpaste mix during cleaning teeth and if so, is there then enough water in the cleaning process for the fluorine ion to be released from the sodium fluoride which would then combine with the hydrogen in the water to form hydrofluoric acid? Those people using fluoridated toothpast could be cleaning their teeth with a portion of hydrofluoric acid?

Charles Perkins describes this process as follows,
"When sodium fluoride is placed in water, of the required volume, it goes into solution and the fluorine ion is released from the sodium. The fluorine ion then combines with the hydrogen in the water and forms hydrofluoric acid ….which is an extremely active and dangerous poison." (18)

(Is this how the fluorine ion manages to link with the external calcium in the enamel of teeth to form a fluoroapatite layer?) Author's comment in parentheses.

To conclude this section it is worth remembering the words of Dr Mercola who wrote in his newsletter of August 31st 2016, the following;

"*A study from 2010 showed the supposed beneficial fluoroapatite layer formed on your teeth, (by fluoridated toothpaste) heralded by dentist as the answer to decaying teeth, is a mere 6 nanometres thick, 10,000 of these layers would be needed to get the width of a strand of your hair.*
This cast serious doubts on its usefulness …..as this ultra-thin layer is quickly eliminated by chewing on something, the authors of the study concluded.
It has to be asked whether such narrow …… layers can act as protective layers for the enamel". (19)

Varnish Treatment

It has been stated in Chapter 2 that,

"The enamel of permanent teeth continues to form until a child is about 12 years of age",

putting a sealant, such as a varnish, on the teeth of young children may prevent the development of good enamel.

"T*he white enamel of the tooth is hard and durable. It is the hardest substance found in human beings. It is made of apatite crystals called calcium hydroapatite. The enamel has running through it, microscopic tubules". (*20)

Varnish may prevent the healthy flow of fluids within and the flow of fluids flowing out from teeth because the enamel has running through it, microscopic tubules which flow within the tooth and out into the mouth.

"Dentine is also made up of millions of microscopic dental tubules.

All the tubules are filled with fluid that flows constantly between the dentine and the enamel and through the nerve endings and the blood vessels in the centre of the tooth. A constant exchange of nutrients between the tooth and the rest of the body takes place within the fluid. Studies done on rats have demonstrated this dynamic interchange. When a fluorescent dye (radioactive acriflavine hydrochloride) was injected into the abdomen of rats, the dye was found within six to 10 minutes in the dentinal tubules and in the enamel within an hour". (21)

Dr Steiman believed this action to be a self-cleansing mechanism – a supporting environment for dentine. The constant flushing of the tooth structure prevents the movement of microbes into the tooth and prevents the destructive effects of acids formed by foods. At the same time, essential nutrients are introduced into dentine tubules in order to provide a life-supporting environment for dentine, a tissue devoid of any blood supply. *(22)*

Dr Dominik Nischwitz, on pages 16-26 of his book, published in 2020, suggests the following,

"In a healthy mouth, nutrients, and oxygen are delivered by way of the blood stream into the root of the tooth. The tooth gets 'nourished' and passes the fluid out of the tubules, through the dentine and into the enamel. This fluid flow is from the centre through the tubules and into the mouth."

Dr Dirk, described this outward flow process as an internal toothbrush so that plaque or bacteria could not settle on the tooth and were 'somehow' washed away. This process, he said, happened because of the parotid gland, situated in the cheeks, which is part of the endocrine system. This gland secretes saliva and also releases a parotid hormone which controls this outward flow action. The switch for the parotid gland to release the hormone comes from the hypothalamus gland. If this action is disrupted and reversed, the tooth acts like a sponge, collecting bacteria and plaque. Dr Dirk suggested that it is the K2 vitamin that sends the signal to the hypothalamus to flow outwards, while sugar sends the opposite signal. (23)

Vitamin K2 is the mystery X factor that Dr Weston Price new existed but had not been able to name.

So, it is important to note that there is a '*fluid flow within teeth'* and that varnish sealants may disrupt enamel formation and this fluid flow.

The high fluoride content of Varnish is of great concern;

- Varnish has a high fluoride level – 22,600 ppm.

- A single mL contains 22.6 mg of fluoride.
- Dentists apply 0.5 to 1 mL per treatment.
- Since the varnish eventually wears off the teeth, all of the fluoride that is applied (11.3 to 22.6 mg) is ingested.
- Dentists apply varnish 2 - 4 times a year, depending on the decay risk, for children and young people (0-18 years). (24)

Lucy Smith BDS who works at Spa Dental Chard in the UK, says on their website, August 2023,

"We only apply fluoride to children who are over the age of 3: no more than 0.25ml varnish for a full mouth in children aged 3-6; no more than 0.4ml varnish for a full mouth in children over 6. These amounts are determined because fluoride varnish contains an extremely high concentration of fluoride – 22600ppm!…. Children have to avoid eating and drinking for around 45 minutes after we have applied varnish".

Investigators in the US from the University of Michigan's School of Dentistry and other institutions reported in 2021 that fluoride varnish takes more than four hours to bind to teeth. The study compared the ability of fluoride varnish and fluoride gel to bind to enamel in 68 volunteers, finding that the use of fluoride varnish – which contained more fluoride than the gel – was limited by the long time it takes to bind to enamel.

The authors wrote:

"In conclusion, fluoride varnish needs to remain in contact with the teeth for prolonged times (more than four hours) to reach the same reactivity obtained by a four-minute application of acidulated phosphate fluoride gel." (25)

USA hygienist Barbara Tritz, RDH, BS, MSB, wrote the following, in 24th February 2023 in an article called,

'Fluoride-the Destroyer: See the Dark Side',

"Varnish leaches the fluoride into the saliva for two to three hours. This allows the fluoride to go directly to the brain through the oral mucous membrane. We apply these varnishes to children up to the age of 14. Developing brains are directly affected by fluoride."

she added that,

"One glass of ionomer-based varnish has been reported to release fluoride for up to six months."

"The varnish not only contains fluoride, but we must also be aware of the adhesive within the varnish. Difluoro silane is one of the adhesives in fluoride varnish. If you look up "silane" you will see it is a "flammable, and poisonous gas that is very toxic to inhale. It is a strong irritant to skin, eyes and mucous membranes (i.e. oral tissues…)". Other adhesives are shellac, alcohols, and polyurethane. And yet, here we put these into the mouths of babes".

"Another favourite dental fluoride treatment is Silver Diamine Fluoride. It is a concentrated silver fluoride salt – 38% Silver diamine Fluoride- which is 44,800 parts per million which is nearly twice as strong as fluoride varnish. SDF is also only approved by the FDA for sensitivity and not decay treatment or prevention. Dental offices do use it "off label".

"The paste a hygienist uses to polish teeth- "prophy paste" – can contain 20 times more fluoride than toothpaste used at home. Gels and varnishes used in the dental office contain very high levels of fluoride levels."

"Many of the options for filling materials also contain fluoride, including all glass ionomer cements, all resin-modified glass ionomer cements, all giomers, all polyacid-modified composites (compomers), certain types of composites, and certain types of mercury amalgams. One glass ionomer-based varnish has been reported to release fluoride for up to six months."

As John D. MacArthur states in his book, 'Pregnancy and Fluoride Do Not Mix', Page 73:

"*From 2 to 30mg of fluoride may be swallowed by children after dentists apply high-concentration fluoride gels (12.300 ppm fluoride) and varnishes (22.500 ppm fluoride) to their teeth."* (26)

MacArthur also stated that fluoride containing resin based dental sealants have proved, "*capable of contact inhibition of Lactobacillus acidophilus the beneficial bacteria for the absorption of iron as well as the inhibition of S mutans that causes tooth decay."* (27)

The conclusion of a study by Garcai-Hoyos et al, 13th Dec 2012, was that:

"*The topical application of dental varnish leads to a significant increase in urine fluoride (F-), (after two hours), which is attributed to the application of the product. To say fluoride varnish is safe is wishful thinking."*

A Study on the effects of Varnish from Sweden, 2021, conducted by the Karolinska Institute and other universities stated the following:

"*Toddlers from 23 dental clinics in the Stockholm area who received fluoride varnish every six months had the same levels of tooth decay as those who received no varnish, according to a report in the European Archives of Paediatric Dentistry June 9. 2021"*.

The investigators also found no benefit from the use of fluoridated toothpaste by the time the children were seven years old. The authors conclude:

"*For toddlers, fluoride varnish does not seem to be an adequate prevention tool. Brushing with fluoride toothpaste from one year of age could not arrest caries' development. Immigrant background was the strongest predictor. A new toolbox as well as collaborative upstream actions for reducing free-sugar intake are needed."* (28)

Two personal experiences after having varnish treatment

* Bill Edmund's son was poisoned by painting fluoride varnish on his teeth. Bill lives in the South of England, Hampshire. Bill's son was violently sick after having the treatment. The dentist claimed that it was not the fluoride. The next time it was done again, the son was again violently sick. At about the same time, Bill read an article in the 'New Scientist' (1978) about a boy in Australia who had died in the dentist's chair while having varnish applied. This experience triggered Bill's research and campaigning activities. Bill says:

"*I have the guilt of making my son sick through allowing his teeth to be painted with fluoride... when he was very young. He now has mild fluorosis, white spots on his teeth*."

Bill maintained a 'blog' on fluoride and water fluoridation from April 2005 to September 2021, posting anything mentioned on this topic from around the world – https://ukagainstfluoride.blogspot.com

* A three year old child died during a varnish treatment, in 1974. The New York Times, reported in 1979, on 2nd January that a three-year-old child was killed by fluoride treatment in the dentist's chair. '$750,000 was given in compensation. (29)

Fluoride Gels – professionally applied

"Fluoride gels were introduced in the 1960s without any clinical evidence of safety or effectiveness (Ekstrand 1987). As with other fluoride products, the dental community assumed that the fluoride gels were safe. It wasn't until the early 1980s that researchers discovered that both children and adults were absorbing enormous quantities of fluoride from gels, as evidence by the staggering spikes in blood fluoride levels that occurred following treatment." (30)

Ellen Connett sourced the following information which can be found at FANs website - www.fluoridealert.org.)

"Fluoride gels are acidic, highly concentrated fluoride products that dentists topically apply to a patient's teeth about two times a year. The gel contains 1.23% fluoride, which equates to 12.3 mg of fluoride for every 1 mL. Since dentists apply anywhere from 4 to 8 mL of gel for each treatment, a patient can be exposed to up to 100 mg of fluoride in a single sitting. (Whitford 1987) Of all the fluoride products currently utilized in dentistry, these fluoride gels are – without question – the most hazardous. While fluoride gels are designed to be applied "topically" (i.e., directly to teeth), very large quantities of fluoride are absorbed into the body during the treatment. Patients can swallow 20 mg of fluoride from a single treatment – doses that far exceed the doses that can form toxic concentrations of hydrofluoric acid in the stomach."
"Due to the high exposure to fluoride during gel treatment,, many patients – particularly children – will experience nausea, gastrointestinal pain, or vomiting within an hour of the treatment. Fluoride causes the gastric symptoms by combining with gastric acid in the stomach to form hydrofluoric acid, which exerts a direct toxic effect on the gastric mucosa. Scientists have found that a single dose of just 3 mg fluoride is sufficient to damage the gastric mucosa, and that tissue damage can occur in the absence of gastric symptoms. (Spak 1990). Most children receiving fluoride gel treatment will ingest doses that far exceed 3 mg. Thus, even if no gastric symptoms are experienced, tissue damage to the gastric mucosa will occur. Fluoride gels also produce an enormous spike in blood fluoride levels for up to 14 hours, exposing every tissue in the body to fluoride concentrations that have been found to damage, in short-term exposures, the kidney, the male reproductive system, and glucose metabolism. The long-term significance of this effect has yet to be investigated."

"Although the dental community has taken steps to reduce the amount of fluoride that gets into the blood, the extent of fluoride exposure from fluoride gels continues to remain excessive and toxic. Even with the dental community implementing safer precautionary measures it is still estimated that children ingest an average of 7.7 mg of fluoride per treatment while adults ingest an average of 10.3 mg. (Hawkines 2003; Johnstone 1992) . These doses are sufficient to produce a toxic spike in the blood fluoride level."

Self-applied fluoride gels

"Despite safety warnings dating back to the early 1980s (Ekstrand 1981), dentists are still prescribing fluoride gels for home use by patients at high risk of caries, including individuals with reduced salivary flow as a result of cancer treatment. Patients prescribed self-applied fluoride gels should be aware that this method of fluoride delivery is particularly risky. Although self-applied fluoride gels generally contain less fluoride (5 mg of fluoride per millilitre) than professionally applied gels (12.3 mg/mL), the process of self-applying the gels can result in significantly more ingestion of the product. In one published case report, a 50-year old cancer patient developed fluoride poisoning, as evident by 'gastric symptoms, difficulty in swallowing, leg muscle soreness and knee joint soreness.'" (Eichmiller 2005). The dentists who authored of the report stated that:

"The combination of gastric problems, difficulty in swallowing, leg muscle pain, and pain in the knee and hip joints is a key indicator of fluoride toxicity, and patients using high-concentration home fluoride treatments should be monitored for these symptoms." (31)

"In other research, scientists have found that ingesting small quantities of self-applied gels can significantly erode the gastric mucosa in the stomach (Spak 1990). Not only can self-applied fluoride gels cause systemic fluoride toxicity, there is (also) a notable absence of evidence demonstrating their efficacy. As noted in one review:

"Relatively little information is available to document the efficacy of these self-applied fluoride gels. . . [J]ustification for the use of these self-applied fluoride gels is tenuous. . . . On the other hand, there is evidence to suggest that their use by preschool-age children increases the risk of developing dental fluorosis." (32)

Other Effects from Fluoride Gels

"In 2008, researchers reported that fluoride gels damage the oral mucosa. (Tsai 2008). The researchers found that a single application of fluoride gel to the oral mucosa of rabbits for 4 minutes caused cell damage (e.g., DNA strand breaks) that did not disappear, but actually increased, during the 8 days of follow-up examinations. Based on their findings, the authors suggest that dentists take precautions to prevent the fluoride gels from contacting the gums.
In addition to damaging the oral mucosa, fluoride gels have also been found to damage tooth restorations, such as porcelain or ceramic veneers. As noted by Johnston, the "APF gel releases hydrofluoric acid which may etch and dull these restorative materials after several applications." (33)

Fluoride Mouthrinses

Fluoride mouthrinses contain 230 ppm and a single mL of fluoride contains roughly 0.25 mg of fluoride. Between 5 to 15 mL are generally used per rinse, which equates to 1.25 to 3.75 mg of fluoride. (34)

A study in 1995, in Egypt found that 24 hours after mouth rinsing with 0.05% sodium fluoride solution there was a 49% reduction in Lactobacillus counts the beneficial microorganism in the gut. This was statistically significant. (35)

Two Studies from 2021

1) Topical fluoride of limited use in degrading cariogenic biofilm.

Biofilms of the oral bacterium Streptococcus mutans, which is the main cause of dental decay, are indeed disrupted by topical application of sodium fluoride, but only in limited circumstances, according to report published 14th September 2021.

The study by Ye Han of the Jeonbok National University in South Korea in Scientific Reports, found the sodium fluoride preparations only disrupted young biofilms, and, except for those with a concentration of 2000 parts per million, had no effect on older, mature biofilms.
And anyway, the 2000 ppm level of fluoride is greater than that found in most toothpastes**. (36)**

2) Topical fluoride use may corrode orthodontic wires, prolong therapy – study 2021.

Researches from the Krishna Institute of Medical Sciences and Bharati Vidyapeeth Dental College and Hospital, writing in a recent issue of Dental Press Journal of Orthodontics, found:

"There is a significant reduction in the unloading yield strength when the [orthodontic] wires were exposed to sodium fluoride acidulated phosphate gel."

"The result suggests that use of topical fluoride agents affect the mechanical properties of the wires, leading to increase in treatment duration. Fluoride prophylactic agents must be used with caution in patients undergoing orthodontic treatment. Injudicious use of these agents may cause corrosive effects on the orthodontic wire surfaces, with alteration in their mechanical properties," concluded the authors. (37)

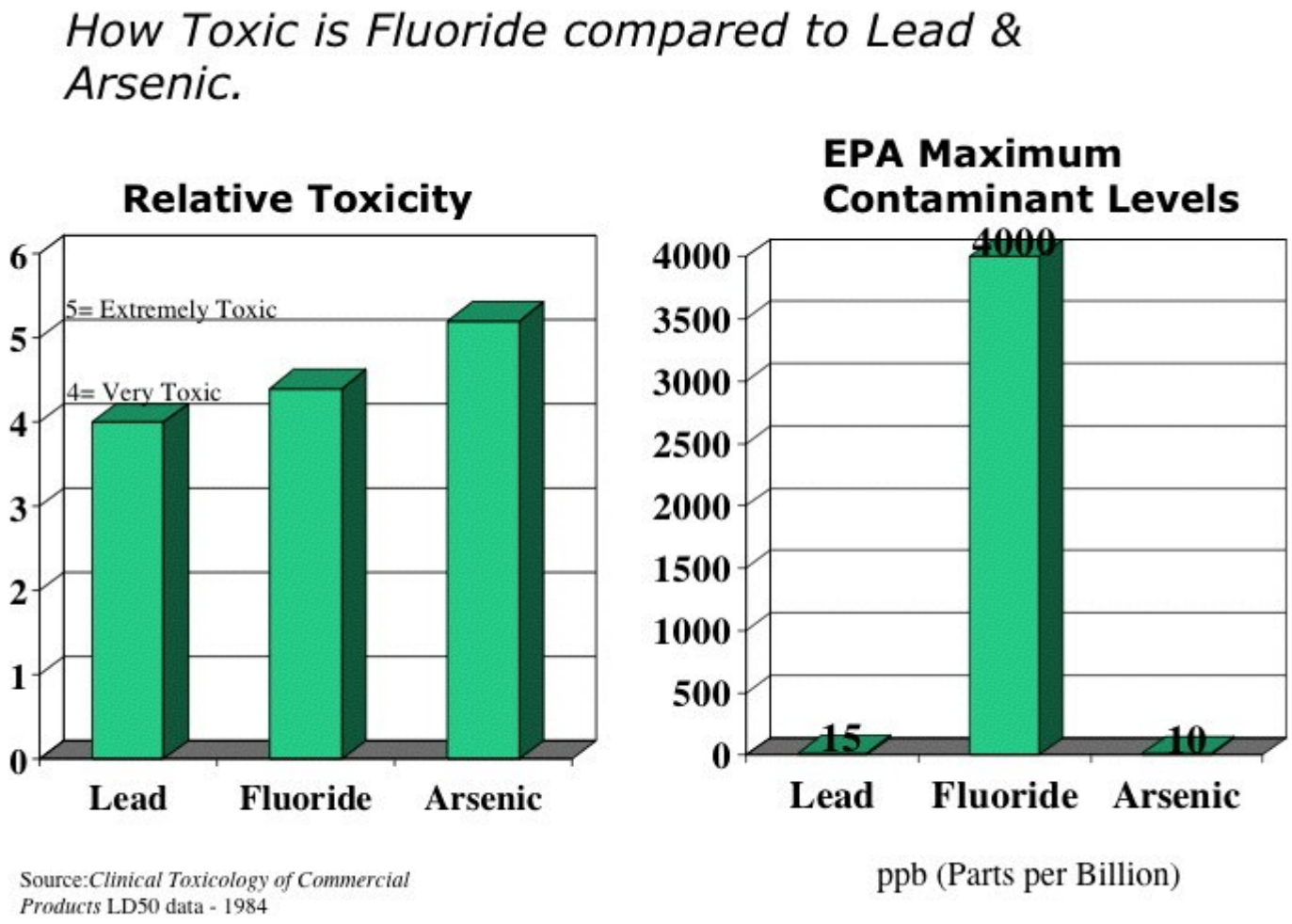
Concluding comments

In the UK, the dental department for Public Health England sends out information; an 'oral toolkit' to all local authorities in England, advising use of fluoride in every form; fluoridated toothpaste, fluoridated products, fluoridated varnish and fluoridated water.
Such a practice would certainly result in an overdose of fluoride, as discovered by Dr Peter Mansfield who found that 60% of people in fluoridated areas were getting more than the 'acknowledged' safety limit of 3mgs of fluoride per day; some were getting up to 20mgs per day. Even in the non-fluoridated areas, 10% of the population ingested excessive fluoride.
Personal experiences of the effects of varnish treatment include from, forty years ago.

It is of great concern that the general public's concept of fluoride, is that it is benign and even thought of, by some, as a 'health mineral' but it is as poisonous as lead and arsenic and *"not required for any human growth, development or function"*. (38)

People know about the toxic effect of lead or arsenic and would not want lead or arsenic in their toothpaste but the toxic effect of fluoride has, so far, escaped their attention.

Below is a graph showing the toxicity between lead, fluoride and arsenic:-



Fluoride is a little more toxic than lead and just slightly less toxic than arsenic and yet it is allowed to be consumed at 4,000 ppb compared with practically zero for lead and arsenic!

Fluoride is a cumulative poison The fluoride ingested or absorbed by the body of this, 50% is retained and placed mainly in the bones, the other 50% is excreted through the kidneys.

There is a worrying lack of awareness by the general public regarding fluoridated toothpaste. To read the experience of three concerned people, go to appendix 1 a) a mother's story; b) a grandmother's observations c) a lady's concern for her elderly uncle.

Quotes from Doctors, Dentists, Scientists, an Author and a Parent

Dr John Yiamouyiannis said the following, in his book The Aging Factor, on page 84,

"Use non-fluoridated products ", and mentions the study by Tijmstra and co-workers who concluded that: *"Children who used either fluoride toothpaste or tablets (used to simulate the amount of fluoride in water) scored essentially identical indices as the non-users."*

"Sources of fluoride around the home include fluoridated toothpaste, mouthwashes, vitamin tablets, and vitamin drops. These products should be immediately discarded and replaced with non-fluoridated products."

David Kennedy pointed out, in an interview for the 'Holistic Health Summit' in 2018, that:

"The fluoride in toothpaste is a refined product, either sodium fluoride, stannous fluoride, or monofluorophosphate, It's relatively pure. But it's a deadly poison. You can use it (fluoride) topically and then

spit it out. Well, things absorb through the mouth. There's no way you can put something inside the oral cavity and not have it absorbed in the bloodstream. There are many drugs that are designed not to be swallowed, but just put it under your tongue, and it'll get right into your blood stream up to your brain."

"So, the problem is that you can't put poisonous things in toothpaste because toothpaste gets swallowed and absorbed. And the same is true of your drinking water and you take a shower or a bath, you'll absorb that through your skin… So, it's a crime that's ongoing in our time."

The Danish dental researcher, H. Eggers Lura, said:

"Those people recommending toothpaste have never tried to make a control experiment of mouth rinsing purely with cold, oxygenated water, in contrast to the dirty, greasy glycerine- and-sugar-containing paste ingredients. There are several examples where these toothpastes have had a caries-promoting effect. Most toothpastes contain insoluble polishing ingredients which are able to bind sugar and retain it in the mouth unless thoroughly rinsed away. Sticky toothpastes soil the mouth – they only cover the bad smell from food retentions." (39)

Dr Elmar Jung in his book, 'Shut Your Mouth and Open Wide', published 2019, as well as Dr Chester Clarke (in a talk he gave, Nov 13th 2019), state that:

"There is no need for toothpaste,"

suggesting that it is the brushing and saliva making the difference in cleanliness and tooth health.

Melvin Page DDS offers a solution to good dental health very succinctly in his book, 'Your Body Is Your Best Doctor':

"As far as dental decay is concerned a miracle toothpaste or some miracle chemical in the water has been sought. The results have been negative. Dental Decay and degenerative ills are on the increase rather that the decrease. The answer is to be found in diet and good body chemistry."

Ramiel Nagel in his book, 'Cure Tooth Decay', published 2012, states that:

"Placing fluoride in toothpaste and into water supply is a crime'. (Page 166).

"Do not submit to dental treatment that contains fluoride." (Page 166).

"Under excellent nutritional circumstances teeth will rebuild and protect themselves." (Page 189)

"Fluoride is a deadly poison and when fluoride is being placed in our water, our toothpaste, and on our teeth, it adds a toxic burden to the body. Because of their less developed immune systems, children are more susceptible to chemical exposure than adults. It is risky and unwise to expose your child to fluoride at a young age," (Page 204).

Mark A Breiner DDS – in his book, 'Whole-Body Dentistry', published 2011, stated;

"Insist that the family dentist does not use topical fluoride treatments. And, when seeking a new dentist one of the first question to ask is: 'Do you use topical fluoride?'" (Page 229).

Gerald P Curatola DDS – 'The Mouth-Body Connection', published 2017.

"*Both toothpaste and mouthwash clear the way for pathogens to proliferate, because they kill off the microbes that exist to keep opportunistic invaders in check.*" (Page 63)

Phillip Day, author and researcher said, March 2017 –

"*Fluoride in toothpaste passes through the gums in 26 seconds."*

Bill Edmunds, a parent

"*Since the late 1970s, when fluoride toothpaste came into fashion, oral cancer incidence rates have increased by more than four-fifths (83%) in Great Britain."* Bill Edmunds was the first to check out the statistics on oral cancer, 9th March 2016.

Dr Hardy Limeback, dental researcher from the University of Toronto in Canada, says:

"You can get perfectly healthy teeth with resistant enamel without having fluoride exposure."

(Limeback's son has dental fluorosis, and so he no longer keeps fluoride toothpaste in his home). (40)

Dr A K Susheela considered that dental caries are not a fluoride deficiency disorder and that topical fluoride as contained in toothpaste or mouthwashes does not have the potential to remineralise or rectify the damage to the teeth due to caries. She said:

"Promoting fluoridation of dental products in India should be considered as a 'crime'."

Bruce Spittle's book, 'Fluoride Poisoning', on Page 63/4, states:

"In my view, the use of topical fluoride in dental products is also unsound and fluoride does not result in teeth being decay free."

Dr E.A. Hooton of Harvard University stated:

"Let us cease pretending that toothbrushes and toothpaste are more important than shoe brushes and shoe polish."

Dr Graeme Munro-Hall states in his book, 'Toxic Dentistry Exposed', Page 55:

"*Toothpaste is not essential in getting teeth clean… A good cleaning technique with a properly shaped toothbrush or ultrasound is the vital factor. We are all conditioned into using toothpaste like Pavlov's dogs. When we pick up a toothbrush, we automatically want to put toothpaste on it. The function of toothpaste is mild abrasion to help remove the dental plaque or film that sticks to teeth. If the toothpaste is too abrasive, it will wear your teeth away; smokers' toothpaste fits into this category… Read the labels carefully when choosing toothpaste. Find one that does not contain fluoride, sodium laurel sulphate, sugar (in various guises) and artificial colours and flavourings."*

Prof Paul Connett said,

"Dental products are the major source of fluoride exposure, particularly for children".

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