"Progress always involves risks. You can't steal second base while keeping your foot on first."

—Frederick Wilcox

"Why not go out on a limb? Isn't that where the fruit is?"

—Frank Scully

"Many great ideas have been lost because the people who had them could not stand being laughed at."

—Author Unknown

CHAPTER NINE

Infant Oral Health

Baby Bottle Tooth Decay

BABY BOTTLE TOOTH DECAY, sometimes known as nursing caries, is a dental condition in which the teeth of an infant or young child are severely damaged. It is caused by frequent prolonged exposure of a child's teeth to liquids containing sugars. Even lactose (the milk sugar found in cow's milk, formula milk and breast milk) can cause decay when in prolonged contact with the teeth. Bottles containing juices or other liquids containing sugars are the most common cause, however.

Infant sleeping with baby bottle

Normal feeding is not a problem because the liquids clear from the mouth quickly. But offering a child a bottle containing sweet liquid many times a day as a pacifier, or allowing a child to fall asleep with a bottle of formula or juice during naps or bedtime can lead to serious dental problems.

2-year-old with baby bottle

Simple steps that can be taken by parents and caretakers to prevent or alleviate the problem of infant tooth decay include:

- After each feeding, wipe the child's teeth and gums with a damp washcloth or gauze pad to remove plaque.
- Begin brushing your child's teeth with a soft toothbrush and a pea-shaped amount of all natural non-fluoride toothpaste as soon as the first tooth erupts.
- If your child needs a comforting bottle at nap time or during the night, fill a nursing bottle with water rather than formula, juice, milk or sweetened liquids. You could also give the child a clean pacifier recommended by your dentist or pediatrician.
- Start visits to a general dentist who works on children or a pediatric dentist when the child is between six and twelve months of age. Such visits help assure the child's teeth are developing normally and that sealants, if indicated, are applied as the child grows. Make appointments regularly.

Infant Tooth Decay

[Very Early Decay] [Decay] [Severe Decay]

Nutrition is the floss for your general health... Toxins are a decay of our life force. Go out and make good choices!
—Marcia Poe, RDH, MS, CNS

My teeth, both top and bottom, were much worse than this picture...black and just little nubs!
—Marcia

"Data from Head Start surveys show that prevalence of baby bottle tooth decay is about three times the national average, especially among poor urban children, even in communities with a fluoridated water supply."

—Von Burg MM et al. (1995). Baby Bottle Tooth Decay: A Concern for All Mothers. *Pediatric Nursing* 21: 515-519.

Real People—Real Stories
My Teeth Made Me Toxic...
A Dental Hygienist Speaks Out!

Case History—Contributed by Marcia Poe RDH, MS, CNS (Registered Dental Hygienist)

My obsession with teeth started before I even had any—my story begins with the day I was born! My mother went through special measures to get pregnant and I ended up her only child. During a long and difficult labor, Mom's blood pressure spiked to dangerous levels. When I was introduced to the world, Mom was told she would, "...die within a year"! That's not what a new mother needs to hear. Today we know the effects of post-partum depression on the mother, child and the family. Those TOXIC WORDS were a prescription for a crash. Out of a debilitating depression, made worse from malnourishment due to nutritional deficiencies, my mother was afraid to bond with me, then DIE! I was unaware of all this until my '40s, when my favorite aunt shared the story. My aunt also told me that when I was handed to my Dad, he pushed back and said, "I don't know what to do with a Girl!" That information explained to me why my rejection quota was so low all of my life and the emotional and mental scars that go with it. I begin with this not to belabor my personal experiences, but rather to let you know how I got to where I am today and how my paradigm about health has shifted 180 degrees—you see, I'm a survivor of Baby Bottle Syndrome.

MY BEST FRIEND BECAME MY DOWNFALL

Since I was left in my crib alone for long periods of time and Mom could not breast-feed, my bottle became my best friend and my food the most important comfort in my life. Without breast milk and colostrums received from breast milk, our immune systems are compromised—making us more prone to illnesses. Cow's milk is high in lactose, the milk sugar that lies on the teeth, causing most damage in the night when saliva slows. As a result of this, I developed Baby Bottle Syndrome, with black, disfigured baby teeth.

TOXIC TEETH—TOXIC SPIRIT

We call this type of condition "bombed out" in the dental field. I was too embarrassed to smile and was therefore labeled shy. Social relationships were difficult for me and my self image severely damaged. I went to the dentist often and had amalgam fillings (made of 50% mercury, which is toxic) placed at an early age, but there weren't the white materials for the front teeth in those years, so I was left with those 'ugly' teeth that I always tried to hide—my psyche (spirit) was TOXIC from my teeth.

My adult teeth erupted around age six, replacing some of those hated front black baby teeth. Mom did not encourage me to brush, (she had dentures since she was 20 years old ...common in her day and a whole other story). Children do not take time for such necessities without adult insistence until those habits are formed. There was a BIG, WIDE WORLD to explore, only time for play, no time or encouragement for oral hygiene!

Even though I was at the dentist for fillings often, no one told me what caused decay, nor what to do to take care of my teeth. Floss and little brushes to clean between the teeth weren't well known in the 50s, not in rural Iowa, except to a few dental professionals whose work was cutting-edge.

Sugary, sticky raisins in a little box, was what Mom sent with me to go out to play, after all, it was a "whole food!" And those thick, red, cherry Charm suckers would last a whole movie, a movie with a newsreel, cartoon and previews of coming attractions. Red lollipops are more cariogenic (decay causing) than other candies—just my luck! We didn't know then that chocolate and cheese (calcium) buffer acids in the mouth and are better choices at the end of a meal or for snacks.

NEW PROCEDURE, NEW CHALLENGES

I had my first root canal (likely toxic) at age ten. A new dentist in the next town learned a new procedure that Mom called surgery—she saw to it that I got my usual malt after dental work, my tapioca pudding and extra TLC after dental work. She mistakenly believed that sugar and dairy are known for their healing qualities—we now know otherwise. Hugs and attention felt good though—non-toxic and essential!

SAD DIET = REOCCURRING INFECTIONS

I had numerous illnesses in my childhood, influenced by poor diet...from earaches, strep throat, pneumonia, a tonsillectomy, to spontaneous nosebleeds and leg pains. Mom served limited veggies and Dad expected meat and potatoes with bread and gravy at the evening meal. Mom specialized in her pies and cinnamon rolls. By now you have a visual picture of my childhood diet.

THE AWAKENING

At age eight we moved to a neighboring town and I lived with a family for a month to be able to start school on time, since moving into our new house was delayed. That family was used to putting a multi-vitamin at each person's plate at supper—they even gave me one! I clearly remember saying to myself at the time, I feel different inside... I feel calm. It was a personal observation and my first realization that quality nutrients affect how we feel—as a child I just didn't understand why at the time.

PLAY BECOMES REALITY

I was a very unique type of child. I drew anatomy for fun and played being a dentist. Those were the years that I collected all the lost baby teeth that my friends would give me and pretended to do fillings on them, but I only had dried-up shampoo to work with for fillings (after three days it goes into the gel stage when left to dry on the edge of the sink). Teeth fascinated me, dental equipment amazed me, and the dentist was a favorite person in my life. All I had to do was open wide and I would get a "good girl" out of him—I could do that!

I went on to college, not knowing what I wanted to be when I grew up, just something in healthcare. Nursing looked like passing out pills and writing in charts, pharmacists typed labels and counted pills, doctors and dentists were rarely a choice for girls back then. There was a dental clinic on the University of Nebraska campus

and, of course, I needed some work done. That is where my lifework would become apparent. A dental student sat me down and explained the big WHY we need to take care of our mouths and the big HOW that is done.

This experience showed me the possibilities of a career as a dental hygienist. A new program had recently started with a bachelor's degree program at the university. Eureka! I instantly knew, That is for me! There were only ten positions available each year, but I made it and soaked up all the information about teeth and the mouth. My mom (who didn't die) could not believe I would want to put my hands into people's mouths. She was a nurse's aide; back rubs and enemas were her thing. But I was passionate and driven. I graduated and left college chomping at the bit to cure the world. It's sad that I was too late to save my Dad's teeth from periodontal disease and he too was left with dentures.

TO FLUORIDATE OR NOT?

My first job was in rural Nebraska and that is where I went with my employer to a debate on fluoridation. Of course, I had learned well and just KNEW that fluoride was needed to stop that decay, which was my arch enemy. I remember commenting that, "Those poor, older people just don't know how good fluoride is for them. It is even good for their bones, don't they know?" I would later learn how wrong I was.

My mother did pass (not until I was in my early thirties), but she was only fifty-six and way too young. That is when I decided to study nutrition—the best variable for achieving health. Mom had dentures; I didn't want to go there. She died of her one and only heart attack; I didn't want to go there either. Myself a mother of three, I also didn't want my children to experience what I had. I wanted to watch my family grow and develop. Mom did not take care of herself. She smoked, was sedentary, ate few fruits and veggies, drank coffee all day and into the night, ate convenience/processed foods, usually ate alone the last twenty years, always worried about family and doing for others and not herself. A huge emotional stressor was the final straw to a lifestyle of neglect.

HEALTH DEPLETION VIA FLUORIDE— HYGIENIST BECOMES HEALTH DETECTIVE

Driven to learn all I could to help my family and others, I found a university that taught cutting edge nutrition for a master's degree in clinical nutrition. I was infatuated with how nutrients, or their lack, could affect health.

That is where I heard my biochemistry instructor say that, "all biochemists know that to destroy proteins in the lab, you use fluoride" and "...excess fluoride creates jagged bone growth." I looked at my hands and the knots on my knuckles and instantly decided I needed to learn more. I wrote my thesis on systemic effects of fluoride to dental personnel. You see, dentistry didn't use gloves until AIDS awareness and subsequent precautions in the mid-80s. Before then, gloves were not routinely worn by dentists, assistants or hygienists. The polishing paste that is used for professional dental cleanings is a very concentrated fluoride compared to toothpaste—hygienists literally bathing their hands in that

potent mixture throughout the day while cleaning teeth. There are too many variables to say that fluoride is the only cause of such effects to the hands of those exposing themselves to it but it certainly looked like a major culprit.

SCIENTIFICALLY SPEAKING...

In conducting research of the health-depleting effects of fluoride, I found a study from Australia showing a higher concentration of fluoride in the bones of secretaries with carpal tunnel syndrome (the number one disability for hygienists), than those secretaries without carpal tunnel. No real studies have been done on fluoride's effects to dental personnel. I worked for an older dentist who had kyphosis (hunchback), which is a symptom of skeletal fluorosis. This dentist did numerous dental cleanings himself daily. He worked six days a week for over forty years without gloves. Did he absorb fluoride through the skin? Was it just the long hours bent over the patient? A bone assessment would supply data about the fluoride load since it is cumulative throughout life. He was killed in a car accident and though I really wanted to find out that information, it was not a subject to bring up to the family at such a time. The mystery was buried with him.

OTHER DENTAL OFFICE EXPOSURES...

There are many other types of toxic exposures at any dental office...from radiation, to mercury, to high pitched noises, EMF's (electro magnetic frequencies), lead foil, cleaning disinfectants, blood-borne microorganisms, x-ray toner, and stress. There is an exceptional amount of stress in a career that can cause discomfort to the people we are trying to build a rapport with, all while trying to help them to be comfortable and proud of their own mouths. But it is a profession I love.

My research for my thesis led me places that I wasn't prepared for; my truths were under attack. My curiosity took me from the dental school library, to the local medical library, to all the books ever written that I could get my hands on, to collecting data on hygienists at a local dental conference. I even found a journal reference honoring my old boss from Nebraska, the dentist at the fluoride debate, as a pioneer in the "pro-fluoridation fight." The more I read about the cautions, the more I felt that risking the thyroid in order to prevent a cavity was not a good trade off...and to veneer the front teeth, damaged from fluorosis, just because you used fluoride to possibly prevent a cavity, isn't even cost effective.

Fluorosis before treatment

After porcelian laminate veneers to cover damage

The risk of fluorosis, plus increasing the risk for bone cancer, increased hip fractures, negative effects to the brain and IQ, calcifying the pineal gland and damage to the kidney and liver is not worth the risk to benefit, in my opinion. There are other factors more in our control to prevent cavities, non-invasive options that are easy to implement.

WHAT EXACTLY IS FLUORIDE?

Fluoride is a trace mineral, and in nature, only found bound to another element, such as the ore fluorspar (calcium fluoride) found in soil. It is found both in fresh and sea water, in foods (fish, bone meal, tea), and in the bones of our bodies, where it accumulates over a lifetime.

We were led to believe that it was a safe and effective method to protect teeth from decay. In recent years it has been shown that fluoridation is neither essential for good health nor protective of teeth. It is TOXIC to our system—something else for our bodies to deal with in this modern, toxic world.

MARGIN OF SAFETY?

Currently, fluoride is the only ingredient in toothpaste recognized by the US FDA to prevent cavities. The FDA recognizes three forms of fluoride: *sodium fluoride*, *sodium monofluorophosphate* and *stannous fluoride* and regulates the levels at which they can be included in toothpaste.

Processed food, beverages, dental products, pesticide residues, polluted air and some medications and anesthetics commonly contain fluoride, resulting in some people drinking fluoridated water. Just 1 ppm of fluoride, could be enough fluoride from multiple sources to be health-depleting. According to Dr. William Hirzy, a chemist at American University and vice president of EPA's Professionals Union in Washington D.C., "The difference between the levels of fluoride causing toxic effects and the levels added to water to prevent tooth decay is vanishingly small and deeply troubling." Hirzy JW. 1999. Why the EPA's headquarters union of scientists opposes fluoridation. Press release from National Treasury Employees Union. May 1, 1999.

Fluoride has ***little benefit when swallowed***. According to the Centers for Disease Control, fluoride's "predominant effect is post eruptive and topical." Thus any benefits that come from the use of fluoride, comes from the direct application to the outside of teeth (after eruption) and *not* systemically. Therefore, there is no need to expose all the other tissues and organs of the body to fluoride by swallowing it.

The IAOMT (International Academy of Oral Medicine and Toxicology) Position Paper states, "We find that the present US EPA maximum contaminant level for water (4 ppm) and the recommendation for drinking water fluoridation (1 ppm) will produce a measurable increased risk of cancer, hip fracture, dental fluorosis, and neurological impairment and virtually assures the development of stages I and II skeletal fluorosis in many individuals exposed to these levels of fluoride in their drinking water. The IAOMT PHG [Public Health Goal] for fluoride is appropriately zero. As with all cumulative toxic substances, avoidance of exposure, wherever possible, is the most appropriate public health goal and the only way to completely prevent adverse health effects."

In the development of prescription medications, we generally insist on a therapeutic index (margin of safety) of the order of 100; a therapeutic index of 2 or 3, fluoride's limit, is quite unacceptable, but that is what has been proposed for our public water supplies.

The Marketing of a Toxic Waste

These facts and opinions may be shocking to most people who envision fluoride as protecting teeth, strengthening bones, and who feel that the powers-that-be care

about your dental needs. What you've probably never known is that the fluoride added to drinking water and toothpaste is a crude industrial waste product of the aluminum and fertilizer industries, and a substance toxic enough to be used as rat poison, though it has been banned for that purpose. Early on, industry could only legally dispose of fluoride in small amounts by selling it to insecticide and rat poison manufacturers!

Even if low concentrations were safe, there is no way to control how much fluoride an individual consumes, as some people take in a lot more than others, i.e. laborers, athletes, diabetics, and those living in hot or dry regions; thus it is impossible to scientifically control dosage of fluoride via the water supply.

"We would not purposely add arsenic to the water supply. And we would not purposely add lead. But we do add fluoride. The fact is that fluoride is more toxic than lead and just slightly less toxic than arsenic."

—Dr. John Yiamouyiannis, biochemist and expert on fluoride toxicity

Adverse Effects

Fluoride overdose starts with early signs of cartilage damage and with *"vague pains, noted most frequently in the small joints of the spine. These cases are frequent in the endemic (local) areas and may be misdiagnosed as rheumatoid- or osteo-arthritis or even as fibromyalgia. In later stages, there is an obvious stiffness of the spine with limitation of movements, and still later, the development of kyphosis (hunch back)."* Page 57 of the 1993 ATSDR TP 91/17 under Health Effects states, "If this effect is confirmed, it would mean that hip fracture in the elderly replaces dental fluorosis in children as the most sensitive endpoint of fluoride exposure."

Fluorosis

Continual ingestion of high levels of fluoride can cause adverse effects, including severe dental fluorosis, skeletal fluorosis, and weakened bones; the WHO (World Health Organization) has a guideline of 1.5 mg/L. In 2006, a 12-person U.S. National Research Council (NRC) committee reviewed the health risks associated with fluoride in the water and unanimously concluded that the maximum contaminant level of 4 mg/L should be lowered.

(Fawell J, Bailey K, Chilton J, Dahi E, Fewtrell L, Magara Y (2006). "Human health effects." Fluoride in Drinking-water. World Health Organization. pp. 29–36. ISBN 92-4-156319-2)

There is a very small margin of safety involved in fluoridated water. A concentration of 1 ppm is recommended. Severe fluorosis has been documented from water supplies containing only 2 or 3 ppm. In development of prescription medications, there is generally a therapeutic index (margin of safety) on the order of 100; a margin of safety of 2 or 3 is certainly unacceptable, but that is what's allowed for public water supplies. Due to such wide variations in water consumed from individual to individual, dosage regulation is impossible.

Below are six typical cases of mild to moderate dental fluorosis. The condition presents as various forms of white chalky spots and streaks, sometimes covering

the entire tooth surface. In very mild cases (top left), these spots are barely noticeable. In moderate cases, areas of brown discolouration may occur. Among the patients depicted here, all but the patient at top left requested some form of treatment. All of the patients had nominal exposure to systemic fluoride (through fluoridated water, fluoride supplements or fluoridated toothpaste). *(JCDA,* www.cda-adc.ca/jcda, November 2007, Vol. 73, No. 9*)*

Source: Fluoridation Forum Report 2002 (Page 126)

Fluoride and Thyroid Effects

Fluoride exposure in humans is associated with elevated TSH concentrations, increased goiter, and altered T4 and T3 concentrations.

In summary, evidence of several types indicates that fluoride affects normal endocrine function or response; the effects of the fluoride-induced changes vary in degree and kind in different individuals. Fluoride is therefore an endocrine disruptor in the broad sense of altering normal endocrine function or response, although probably not in the sense of mimicking a normal hormone. The mechanisms of action remain to be worked out and appear to include both direct and indirect mechanisms, for example, direct stimulation or inhibition of hormone secretion by interference with second messenger function, indirect stimulation or inhibition of hormone secretion by effects on things such as calcium balance, and inhibition of peripheral enzymes that are necessary for activation of the normal hormone.

Bone, Joint Pain, and Broken Hips

At one time, fluoride therapy was recommended for building denser bones and preventing fractures associated with osteoporosis. Now, several articles in peer-reviewed journals suggest that fluoride actually causes more harm than good, as it is associated with bone breakage. Three studies reported in *The Journal of the*

American Medical Association showed links between hip fractures and fluoride.

Findings were, for instance, that there is "a small but significant increase in the risk of hip fractures in both men and women exposed to artificial fluoridation at 1 ppm." *(Ibid., p. 746.)*

In addition, the *New England Journal of Medicine* reports that people given fluoride to cure their osteoporosis actually wound up with an increased non-vertebral fracture rate. *(New England Journal of Medicine, Vol. 322, pp. 802-809.)*

Austrian researchers have also found that fluoride tablets make bones more susceptible to fractures. *(Journal of Bone and Mineral Research, 11/94.)*

The U.S. National Research Council states that the U.S. hip fracture rate is now the highest in the world. (U.S. National Research Council, Diet and Health, Washington, DC, National Academy Press, 1989, p. 121. Taken from *The Fluoridation Fiasco* by Gary Null, PhD)

Neurotoxicity of Fluoride—the Brain, IQ, and Pineal Gland

In the fall of 2008, I attended the International Conference on Fluoride Research in Toronto. I was the only dental hygienist in the world there and there were only about five dentists; the other attendees were MDs and PhD researchers. That is where I met many truth seekers from India, China, the UK and around the world, as well as a dedicated group of lay people who spend their valuable time to fight fluoridation in their own locales. China and India had a large presence since there are many people in those countries who have severe endemic skeletal fluorosis due to high fluoride levels in their environment.

- The possibility has been raised by the studies conducted in China that fluoride can lower intellectual abilities. Thus, studies of populations exposed to different concentrations of fluoride in drinking water should include measurements of reasoning ability, problem solving, IQ, and short- and long-term memory.
- Epidemiology studies from China show decreases in I.Q. in children who get more fluoride than the control groups of children in each study. The decreases are about 5 to 10 I.Q. points in children aged 8 to 13 years. *The Lancet*, reported that fluoride may damage the developing brain, causing learning deficits and other problems.
- Another troubling brain effect has recently surfaced: fluoride's interference with the function of the brain's pineal gland. The pineal gland produces Melatonin, which, among other roles, runs the body's internal clock and the onset of puberty. Jennifer Luke has shown that fluoride calcifies the pineal gland and inhibits its production of melatonin. She demonstrated in test animals that this causes an earlier onset of sexual maturity, a situation getting a lot of attention lately.
- Research shows that excessive exposure to fluoride causes impaired memory and concentration, lethargy, headache, depression and confusion.

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- Opposition to water fluoridation has grown, based on the scientific literature documenting the increasing exposures to fluoride and the increased risk-to-benefit from ingestion of fluoride. Health hazards include an acute toxic hazard, such as to people with impaired kidney function, as well as chronic toxic hazards of dental fluorosis, mutagenesis, cancer, neurotoxicity, and bone pathology.

Considering Total Exposure and Decreased Tolerance

Sources

Fluoride is found not only in drinking water; it is ubiquitous, it is everywhere. Fluoride is found in foods that are processed with fluoridated water, which, in the United States, includes nearly all bottled drinks and canned foods. Fruit juices, especially, contain significant amounts of fluoride. A recent study showed a variety of popular juices and juice blends that were analyzed and it was discovered that 42% of the samples examined had more than I ppm of fluoride, with some brands of grape juice containing as high as 6.8 ppm! It is a common practice to use fluoride-containing insecticides in growing grapes. Should the fluoride content of beverages be printed on their labels, as is other nutritional information? Considering the amount of juice some children ingest, and the limited variety of brands that they chose, labeling may be a practical and necessary practice.

Oral Care Products

All fluoride toothpastes marketed in the US are required by the FDA to clearly have certain warning language that cautions against accidental ingestion.

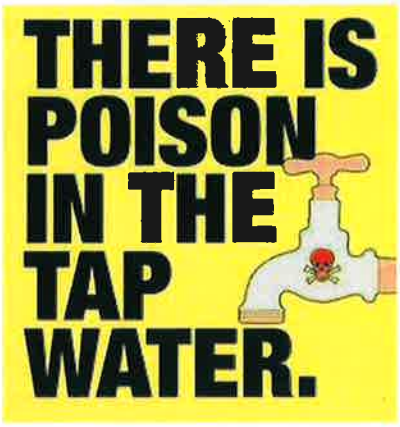
In my research, I found that when toothpaste was first fluoridated, it had a caution on the label that was removed after a few years. In the 1950s, fluoridated toothpastes were required to carry warnings on their labels saying that they were not to be used in areas where water was already fluoridated. Crest toothpaste went so far as to write: "Caution: Children under 6 should not use Crest." These regulations were dropped in 1958, with no new research available to prove that there no longer existed an overdose hazard. In 1990, after a symposium by the National Toxicology Program, a warning was put back on the label, "not for children under six without parental supervision," as if a parent could stop a child from swallowing before they spit.

Other fluoride-containing dental products include fluoride supplements (NaF tablets or drops) for infants and children, fluoride mouth rinses, topical fluoride gels (12,000 to 15,000 ppm), and fluoride varnishes applied by dentists and dental hygienists.

Fluoridation—Mass Medication? Informed Consent? Right to Choose?

Much of our modern society is challenged with chronic diseases in America. Should we add Statin drugs, Synthroid®, Prozac®, Prevacid® or Ritalin® to our water? Many people truly need prescription medications; however, the concern is that fluoride is the only chemical added to the public waters for the purpose of preventing a disease.

What about those groups who can't afford to filter it back out of the water if they choose not to expose themselves to it (i.e. the elderly, many of whom are deficient



in calcium, magnesium or vitamin C, those with kidney issues, the low income population, those incarcerated or those unaware)? Are they given the right to choose... the right of informed consent?

The *Journal of the American Dental Association* (*JADA*) July 2000, has confirmed that the "mechanism by which fluoride may have a meaningful impact on the reduction of dental caries is by topical application, not ingestion."

The IAOMT's ongoing examination of the extensive toxicological data on fluoride has made several preliminary determinations concluding that, "fluoride added to the public water supply, or prescribed as controlled-dose supplements, delivers no discernible health benefit, and causes a higher incidence of adverse health effects. This current policy position by IAOMT confirms those earlier assessments and asserts that there is no discernible health benefit derived from ingested fluoride and that the preponderance of evidence shows that ingested fluoride in dosages now prevalent in public exposures aggravates existing illnesses, and causes a greater incidence of adverse health effects. Ingested fluoride is hereby recognized as **unsafe** and **ineffective** for the purposes of reducing tooth decay."

A moral issue in the debate, according to columnist James Kilpatrick, is "the right of each person to control the drugs he or she ingests." Kilpatrick calls fluoridation compulsory mass medication, a procedure that violates the principles of medical ethics. Morning Call, 2/7/90

"The question is whether any establishment has the right to decide that benefits outweigh risks and impose involuntary medication on an entire population. In the case of fluoridation, the dental establishment has made opposition to fluoridation seem intellectually disreputable. Some people regard that as tyranny."

The International Chiropractor's Association opposes mass water fluoridation, considering it "possibly harmful and deprivation of the rights of citizens to be free from unwelcome mass medication."

The Sierra Club, in the United States, opposes mandatory water fluoridation. Reasons cited include possible adverse health effects, harm to the environment, and risks involving sensitive and/or health-compromised populations.

Water fluoridation is used only in English speaking countries of the United States, United Kingdom, Ireland, Canada, and Australia, and a handful of other countries...

PREVIOUSLY FLUORIDATING THEIR WATER, BUT STOPPING THE PRACTICE, INCLUDE:

- Federal Republic of Germany (1952–1971)
- Sweden (1952–1971)
- Netherlands (1953–1976)
- Czechoslovakia (1955–1990)
- German Democratic Republic (1959–1990)
- Soviet Union (1960–1990)
- Finland (1959–1993)
- Japan (1952–1972)

Europe has rejected fluoridation on the grounds that it is unsafe. Germany, rejected the practice because the recommended dosage of 1 ppm was "too close to

the dose at which long-term damage to the human body is to be expected." Dr. Lee sums it up: "All of Western Europe, except one or two test towns in Spain, has abandoned fluoride as a public health plan—it is not put in the water indiscriminately. They all established test cities and found that the **benefits did not occur** and the **toxicity was evident**."

Should the United States follow Western Europe's example? I say we're long overdue!

Foods and Beverages

- Soda and juice made from concentrate are often manufactured with fluoridated tap water, and hence, have fluoride levels similar to the public water supply.
- Water containing fluoride at 1 ppm or higher (either naturally or artificially) and beverages made with fluoride-containing water contribute the most to daily fluoride intake. Because fluoride accumulates in bone, some foods (e.g. canned salmon) and mechanically deboned chicken (e.g. "Chicken Nuggets") have been found to contain elevated levels of fluoride due to the incorporation of ground bone particles (which are high in fluoride) into the meat.
- Other foods also contain naturally high levels of fluoride. Dark tea, for example, is rich in fluoride (3–6 ppm). Boiling water used for tea or cooking actually concentrates fluoride.
- Many commercially grown grapes in the US are sprayed with a fluoride pesticide named *Cryolite*, whose residues can result in high levels of fluoride in wine or grape juice. If you don't want to spend the extra money buying organic wine, consider purchasing a European brand instead of a California brand—Europe uses much less cryolite in its vineyards, if at all.
- The increase in percentage of communities with fluoridated water has resulted in an increase in the mean content of fluoride not only in soft drinks and fruit juices, but in canned goods (notably soups), leading to increased intake of fluoride by individuals in communities with non-fluoridated water.
- Our data suggest that young children who regularly or frequently drink substantial quantities of juice possibly should not receive dietary fluoride supplements, since they might be at increased risk of developing dental fluorosis.
- Cooking greatly increases a food's fluoride content. As an example, peas contain 12 micrograms of fluoride when raw and 1500 micrograms after they are cooked in fluoridated water, a huge difference. One must also keep in mind that fluoride is an ingredient in pharmaceuticals, aerosols, insecticides, and pesticides.

A great source for list of fluoride content of various food and beverages is ***bruha.com/pfpc/html/f-_in_food.html***

Medicines and Anesthetics

A large proportion of pharmaceuticals are fluorinated e.g., Celebrex [celecoxib], Cipro [ciprofloxacin], Diflucan [fluconazole], Paxil [paroxetine], Dalmane [flurazepam], Lipitor [atorvastatin], Prozac (Fluoxetine). A research pharmacist once told me it is to hold the medication in the system longer. Some have been taken off of the market—Baycol, Redux, Fen-Phen and Pondimin. Most of the fluorinated drugs withdrawn have been shown to cause serious cardiac adverse effects, which is not surprising considering their influence on thyroid hormone activity.

Nearly all of the halogenated general anesthetics (Enflurane, Isoflurane and Sevoflurane) are fluorinated as well.

Fluoride Supplements and GI Distress

Being a good mother and hygienist, I gave my first-born fluoride vitamin drops. I gave up on it when he continually cried uncontrollably every time. Years later I would learn that the fluoride combines with the hydrochloric acid of the stomach to form hydrofluoric acid, even more caustic and irritating to the stomach, causing nausea. This is why children sometimes throw up at the dental office or on the way home after having a fluoride treatment. Milk should be given to supply the calcium that will combine with the fluoride and be less irritating and less absorbable.

Fluoride supplements *have never been approved* by the FDA. Despite nearly 50 years of use, the US Food & Drug Administration has never approved fluoride supplements as a safe and effective method for preventing tooth decay. The FDA has only approved topical fluorides, e.g. toothpaste.

Fluoride supplements place a child at high risk for fluorosis. About 30-45% of children receiving fluoride supplements develop dental fluorosis. As noted by Dr. Paul Riordan: "Supplement use by children younger than 5 years entails a risk of fluorosis which, at the community level, becomes a certainty." Community Dent Oral Epidemiol. 1999 Feb;27(1):72-83.

Poly-Vi-Flor (a fluoridated vitamin) contains the following on its label... "Warning: This drug should be used cautiously by those with heart disease, kidney disease, bone disease, or thyroid disease."

Bisphosphonates—Pesticides and Pollution

- In the past, aluminum smelters produced a significant amount of fluoride pollution that contaminated the environment around them, destroying trees and crippling livestock, but now the major fluoride polluters are phosphate fertilizer manufacturers, plus any industry that burns coal. Skeletal fluorosis is associated with coal burning and is well documented in China.
- Perfluorooctanoic acid (also called C8), PFOA, is used to make Teflon and thousands of other nonstick and stain- and water-repellent products. These coatings are used on cookware, waterproof clothing, furniture and carpets as well as in many industrial applications.
- Nearly everyone has PFOA in his or her blood. It causes cancer and developmental problems in laboratory animals and is an EPA "chemical of concern." To reduce exposure you can use glass, stainless steel or cast iron cookware and, if you use nonstick cookware, do not overheat, which at high heat releases toxic gases. In 2000, 3M announced a phase-out of "Scotchgard®" products after discovering that the product's primary ingredient—a fluorinated

compound called perfluorooctanylsulfonate (PFOS)—was found in all tested blood bank examinations. PFOS are known to cause liver dysfunction and liver cancer.

- Sulfuryl fluoride is a fumigant used on grains is toxic and a source of fluoride in our food chain.

SOURCE: EPA (2004), Human Health Risk Assessment for Sulfuryl Fluoride and Fluoride Anion addressing the Section 3 Registration of Sulfuryl Fluoride Post-Harvest Fumigation of Stored Cereal Grains, Dried Fruits and Tree Nuts and Pest Control in Grain Processing Facilities.

More Susceptible Groups—Subsets of the Population

Those who perspire heavily or have kidney problems consume more water and thus also have a greater risk of fluoride intake. The National Research Council states that children have a higher daily average intake than adults per kg of bodyweight. Osteosarcoma, a rare bone disease affecting male children, is associated with the recommended dosage of fluoride.

"Existing data indicate that subsets of the population may be unusually susceptible to the toxic effects of fluoride and its compounds. These populations include the elderly, people with deficiencies of calcium, magnesium, and/or vitamin C, and people with cardiovascular and kidney problems."

Depending on the source, water fluoridation has been said to reduce tooth decay by anywhere from 20 to 80 percent. But when you compare the statistics between different countries, you see that no matter whether they fluoridate their water or not, tooth decay has steadily been reduced by the same amount.

So, if there's NO BENEFIT, WHY are we fluoridating?

Infants

- In November 2006, the American Dental Association (ADA) began recommending to parents that infants from 0 through 12 months of age should have their formula prepared with water that is fluoride-free, or containing low levels of fluoride to reduce the risk of fluorosis. The ADA offers interim guidance on infant formula and fluoride.
- The ADA found that infant foods containing chicken were high in fluoride. Thus, any infants who regularly eat more than a couple of ounces of infant foods containing high-fluoride-content chicken would be at elevated fluorosis risk.
- Since water fluoridation dosage is not adjusted to the individual, opponents express concern for at-risk populations such as children, the nutritionally deficient, and individuals with compromised renal function, laborers, athletes, diabetics, and those living in hot or dry regions can all be expected to drink more water. On April 15, 2008, the United States National Kidney Foundation (NKF) updated their position on fluoridation for the first time since 1981. The group is now neutral on the practice, while formerly endorsing water fluoridation—it's about time!

Pet Health and the Environment

Due to their smaller body size, most pets are more vulnerable to the effects of fluoride. Do you hear of more of your friends' pets suffering from more arthritis, cancers, kidney issues, thyroid issues, diabetes, etc.? Could fluoride be one of the variables? It's worth doing some investigating.

There are cautions about using fluoridated tap water for hummingbird feeders (because of their tiny body size they are most vulnerable).

Hoofed animals in animal preserves in South Africa are having fertility issues due to a fluoride-emitting factory located nearby. Race/show horses are being crippled and suffering cancers and other disorders from drinking fluoridated water, as clearly shown in the uTube video *Poisoned Horses*. Historically, the environment and cattle near aluminum and fertilizer factories were being affected until legislation forced cleaning up the emissions.

A friend, Pat Nichols Jacobs, world-renowned expert on raising caimans (reptiles), watched her individuals become ill with scoliosis, cataracts and tumors after the water in Kansas City was fluoridated.

Dog food is high in fluoride due to the bone meal (which comes along with fluoride naturally) being added to the formula.

This information hit home, causing a "light bulb" to go on when I found out that my grandson had a habit, since he began crawling, of eating dog food as a game of playing with the dog. At age two, he stopped babbling and lost eye contact. Grandma went ballistic and was afraid he was on the autism spectrum. This occurred during the time that dog food got a lot of press for having melamine in it when imported from China. Of course, we got him off the dog food, had him evaluated, into a pre-school program and worked on his speech. He has steadily improved and is soon to be back into mainstream in school. Was it fluoride? Other toxins? It is difficult to prove some of these suspicions and a bone biopsy would be needed to confirm fluoride toxicity. His adult teeth won't be coming in for another year. It will be interesting to see if they will be affected by fluorosis. The lowering of IQ by fluoride comes to mind as well. I am fortunate that I had the background to look into all factors and was able to change some things in his diet and implement sensible lifestyle changes including using a non-fluoride toothpaste and good quality vitamin/mineral supplements. Improving nutrition is always a good thing—it costs less to stay healthy than to get well!

Summary of What to Avoid

- Fluoridated toothpaste and mouthwashes;
- Infant formulas with fluoridated water;
- Processed beverages;
- Non-organic wine or grapes;
- Green or black tea;
- Mechanically deboned chicken;
- Fluoridated salt;
- Prescription medications and anesthetics containing fluoride;
- Teflon coated pans;
- All sodas, including diet soda—are very acidic and set the stage for decay;
- Chemical sweeteners—they're excitotoxins, stimulating brain cells to death.

Supporting Nutrients

Ensure you have good sources of calcium, magnesium, phosphorus, vitamin D3, antioxidants, and a whole food diet. A healthy diet will always be the most effective tool in the fight against tooth decay and sustained wellness.

The importance of a healthy diet as it relates to fluoride has been suggested in that humans and animals with poor nutrition are more severely impacted by fluoride toxicity than those with adequate nutrition (rich in anti-oxidants) "...with focus on adequate intake of calcium, vitamins C, E, D3 and antioxidants. With a standardized early diagnosis, elimination of fluoride intake and supplementation of a diet rich in essential nutrients and antioxidants, we have shown that fluorosis can be reversed. Patients were monitored at frequent intervals up to one year and the results reported." (Susheela AK, Bhatnagar M. 2002 Reversal of fluoride induced cell injury through elimination of fluoride and consumption of diet rich in essential nutrients and antioxidants. *Mol Cell Biochem*. May-June. 234-235(1-2):335-40.)

Natural Approach to Dental Decay and Periodontal Disease

There are safer alternatives for protecting teeth from dental decay (caries) than using an *extremely toxic* compound such as fluoride. In addition to non-fluoridated toothpastes, one alternative is xylitol, a natural sugar that is now being widely used for oral health throughout Scandinavia and the United States. Xylitol is found in mints, gum, mouthwash and toothpaste and has been found to be very effective in prevention of tooth decay, and may even help re-mineralize teeth as well. Check the source of the xylitol and avoid those from corn. **Note**—Xylitol does, in some individuals, cause gastrointestinal disturbance such as loose stools, bloating, gas, and incomplete evacuation so be mindful if any gastrointestinal symptoms emerge and monitor the amount your body comfortably tolerates.

The dental paste from your dentist is a form of calcium glycerophosphate (calcium and phosphorus) that helps re-mineralize the enamel. Many natural types of toothpaste are available in the health food store or from your professional healthcare provider. There are even brands of toothpaste with added probiotics. Find toothpaste without sodium laural sulfate—a toxic foaming agent. Some common tooth pastes have Triclosan, a potent, toxic pesticide. If this is concerning to you, take comfort in the fact that health risks from chemicals and toxins in dental hygiene products are the most avoidable of all the health risks. It's as simple as being informed and making good choices.

Sealants can be placed on molars and bicuspids soon after eruption and before they have a chance to decay. Have your dentist choose one with a low Bisphenyl A content—has estrogenic effects (a biologically-trained dentist will be aware of these compounds).

Finding a Biological Dentist

Look for a dental office that looks at the whole person, often called a Biological Dentist, Environmental Dentist, Metal-Free Dentist, or Mercury-Safe Dentist. These are the offices that educate the patient about natural choices available, about bio-compatible dental restorative materials, and are offices that use special precautions when removing amalgam fillings, who offer non-fluoride polishing paste, and who belong to organizations

Check out the International Academy of Oral Medicine and Toxicology (IAOMT) at **iaomt.org** *for a biological dentist in your area.*

that help to bring about legislation to protect the public from toxic substances and provide the consumer informed consent on the materials used in dentistry.

My Destiny...

I figure that my teeth issues were a meant–to-be thing and I needed to experience problems myself to better help others and to enlighten people about the risks-to-benefit of their health choices. My biggest regrets in life were when I should have spoken up and didn't...must be part of that shy thing. Fluoride toxicity is a topic that I am passionate about and have a special knowledge about and, for the sake of my grandchildren's generation and future generations, I consider it my obligation to inform the truth seekers of this world, ordinary citizens, about the facts so that they might make an educated decision about their health and well-being.

My Heroes...

Albert Burgstahler, Paul Connett, Dr. Jack Ferguson, Boyd Haley, Bill Hirzy, Pat Nichols Jacobs, David Kennedy, Dr. Gloria Gilbère, Jeff Green, Hardy Limeback, Phyllis Mullenix, John Pennel, Wilma Rockwell, Dr. A.K. Susheela, Kathleen Thiessen, Dr G. L. Waldbott, Mary Ann Wilson, J. Yiamouyiannis and all the biological dentists and others who are just trying to 'do the right thing.'

CHAPTER NINE—Selected Resources

Hirzy JW. 1999. Why the EPA's headquarters union of scientists opposes fluoridation. Press release from National Treasury Employees Union. May 1, 1999.

Page 57, 1993 ATSDR TP 91/17 under Health Effects states, "If this effect is confirmed, it would mean that hip fracture in the elderly replaces dental fluorosis in children as the most sensitive endpoint of fluoride exposure."

Fawell J, Bailey K, Chilton J, Dahi E, Fewtrell L, Magara Y (2006). Human health effects. Fluoride in Drinking-water. World Health Organization. pp. 29–36. ISBN 92-4-156319-2

JCDA, cda-adc.ca/jcda, November 2007, Vol. 73, No. 9

New England Journal of Medicine, Vol. 322, pp. 802-809.

Journal of Bone and Mineral Research, 11/94.

JAMA, Vol. 264, July 25, 1990, pp. 500; Cooper et al., *JAMA*, Vol. 266, July 24, 1991, pp. 513-14; Christa Danielson et al., Hip fractures and fluoridation in Utah's elderly population, *JAMA*, Vol. 268, Aug. 12, 1992, pp. 746-48.

U.S. National Research Council, Diet and Health, Washington, D.C., National Academy Press, 1989, p. 121. Taken from *The Fluoridation Fiasco* by Gary Null, PhD

Effect of fluoride exposure on intelligence in children. Li, X.S., Zhi, J.L., and Gao, R.O. *Fluoride* 28 (1995).

Grandjean P, Landrigan P. (2006). Developmental neurotoxicity of industrial chemicals. *The Lancet*, November 8.

Effect of fluoride on the physiology of the pineal gland. Luke, J.A. *Caries Research* 28 204 (1994).

Statement from Phyllis Mullenix, Ph.D, a fluoride researcher, www.fluoridealert.org.

Waldbott, op. cit., pp. 307-308.

Morning Call, 2/7/90

The New York Times, 3/13/90.

Whyte MP, Essmyer K, Gannon FH, Reinus WR. Skeletal fluorosis and instant tea. *Am J Med* 2005; 118(1):78–82.

Fomon SJ, Ekstrand J, Ziegler EE. (2000). Fluoride intake and prevalence of dental fluorosis: trends in fluoride intake with special attention to infants. *Journal of Public Health Dentistry* 60(3):131-9.

Gottlieb LS, Trey C. 1974. The effects of fluorinated anesthetics on the liver and kidneys. *Ann. Rev. Med.* 25:411-429.

Editors of *Consumer Guide Prescription Drugs*, Beekman House, New York, 1988.

Kiritsy MC, et al. (1996) Assessing fluoride concentrations of juices and juice-flavored drinks. *Journal of the American Dental Association* 127(7):895-902.

A great source for list of fluoride content of various food and beverages is bruha.com/ pfpc/html/f-_in_food.html

Community Dent Oral Epidemiol. 1999 Feb;27(1):72-83.

Feng YW, Ogura N, Feng ZW, Zhang FZ, Shimizu H. The con¬centrations and sources of fluoride in atmospheric depositions in Beijing, China. *Water Air Soil Pollut* 2003; 145:95–107.

EPA (2004). Human health Risk Assessment for Sulfuryl Fluoride and Fluoride Anion addressing the Section 3 Registration of Sulfuryl Fluoride Post-Harvest Fumigation of Stored Cereal Grains, Dried Fruits and Tree Nuts and Pest Control in Grain Processing Facilities. PP# 1F6512. US EPA, Office of Prevention, Pesticides and Toxic Substances. Federal Register Docket No. OPP-2003-0373-0002. docket.epa.gov/edkpub/do/EDKStaffAttachDownloadPDF?objectId=090007d480229aeb

1993 ATSDR

ada.org/prof/resources/pubs/adanews/adanewsarticle.asp?articleid=2212. 13."To protect infants from ingesting too much fluoride, exceeding 0.15 mg/kg, the American Dental Association now warns against using fluoridated tap water to make infant formula." *JCDA*, cda-adc.ca/jcda, November 2007, Vol. 73, No. 9.

Heilman JR, et al. (1997). Fluoride concentrations of infant foods. *Journal of the American Dental Association* 128(7):857-63.

Susheela AK, Bhatnagar M. 2002 Reversal of fluoride induced cell injury through elimination of fluoride and consumption of diet rich in essential nutrients and antioxidants. *Mol Cell Biochem*. May-June. 234-235(1-2):335-40.

Citizens for Dental Health

Citizens for Safe Drinking Water; Nofluoride.com

International Academy of Oral Medicine and Toxicology; iaomt.org

Fluoride Action Network; www.fluoridealert.org

Parents of Fluoride Poisoned Children (PFPC); www.bruha.com/fluoride/

Burgstahler AW, Freeman RF, Jacobs PN. 2008. Toxic effects of silicofluoridated water in chinchillas, caimans, alligators, and rats held in captivity. *Fluoride* 41(1): 83–88. January-March.

Fluorine concentration is drinking water and fractures in the elderly (letter). Jacqmin-Gadda, H., Commenges, D. and Dartigues, J.F. *JAMA* 273 775-776 (1995).

Fluoride in drinking water: a scientific review of EPA's standards. Committee on Fluoride in Drinking Water, National Research Council, 2006. At: nap.edu/catalog.php?record_id=11571.2

Limeback H. 1999. A re-examination of the pre-eruptive and post-eruptive mechanism of the anti-caries effects of fluoride: is there any caries benefit from swallowing fluoride? Community. Dent. *Oral Epidemiol.* 27(1) 62-71. February. [Abstract]

Report of the Ad Hoc Subcommittee on Fluoride of the Committee to Coordinate Environmental Health and Related Programs. U.S. Department of Health and Human Services U.S. Department of Health and Human Services, Public Health Service, Research Triangle Park, NC, (February 1991). Review of fluoride benefits and risks.

Susheela AK, et al. 1992. Fluoride ingestion and its correlation with gastro-intestinal discomfort. *Fluoride*. 25(1):5-22.

Susheela AK, Bhatnagar M. 2002; Reversal of fluoride induced cell injury through elimination of fluoride and consumption of diet rich in essential nutrients and antioxidants. *Mol Cell Biochem*. May-June. 234-235(1-2):335-40.

Thiessen KM. 2007. Adverse health effects from fluoride in drinking water. Comments to the Water Quality and Operations Committee, Metropolitan Water District, Los Angeles, California. August 20.