



# IMAGE AWARENESS WELLNESS INSTITUTE

## *Fluoride Toxicity*

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### FLUORIDE TOXICITY

Fluoride is found not only in water, but also in foods processed in fluoridated areas, pesticides, post-harvest fumigants, and medications.

About 30% of children in fluoridated areas demonstrate mottling of the teeth or fluorosis—a sign of early exposure to toxic levels of fluoride. Fluorosis is evidence that fluoride interfered with normal thyroid hormone production during a critical time of tooth development. This is the same period of time during which the brain is undergoing rapid development. Excess fluoride has the potential to damage not only the teeth (which it is supposed to benefit), but also the brain and the functioning of the thyroid gland.

Symptoms of fluoride toxicity are difficult to identify. Since fluoride interferes with iodine metabolism symptoms of thyroid inadequacy are a distinct possibility. Symptoms associated with severe fluoride toxicity include chronic fatigue which is not improved with sleep, thirst and dehydration, headaches, stiffness, aches and arthritic-like pain and weakness.

Digestive symptoms can include irritation of the mouth, mouth sores, abdominal pains and tenderness, diarrhea or constipation. The skin can itch or form rashes after bathing. Fluoride also alters nerve function resulting in depres-

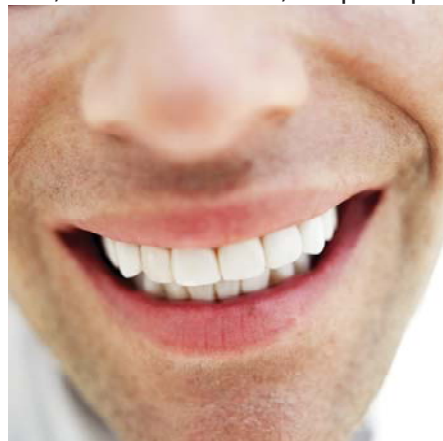
sion, loss of mental sharpness and ability to focus, and nervousness.

Spittle, Bruce, *Fluoride Fatigue*, Dunedin, New Zealand: Paua Press, 2008, 3.

### FLUORIDE AND THE BRAIN

Fluoride and other neurologic toxins are most damaging to the young who have rapidly developing brains and active thyroid glands. Five compounds have been documented as causing damage to the nervous system during development: lead, methylmercury, toluene, PCB's, and arsenic. Recent research suggests that the day may not be far off when fluoride will be added to that list.

According to the work of Robert E. Gosselin, et al in *Clinical Toxicology of Commercial Products*, 5th ed., 1984, fluoride is more toxic than lead and less toxic than arsenic. The safe water standard of the Environmental Protection Agency for lead is 15 parts per billion, for arsenic 50 parts per billion, and for fluoride 4,000 parts per



billion. This does not seem quite right.

Fluoride is very costly to dispose of. Long ago industrial manufacturers of aluminum and fertilizer learned that they could market fluoride and sell it for a profit rather than paying to dispose of the compound.

Despite this there is no doubt about fluoride toxicity. Fluoride is the active ingredient in many pesticides, fungicides, and rodenticides. It has been used for rat poison for many years. People are exposed to fluoride not only from drinking water and toothpastes, but also from residues of fluoride used as pesticides and fungicides on crops.

At the present time exposure of the population to fluoride is probably greater than to any of the rest of these highly neurotoxic substances. What makes the situation particularly tragic is the fact that supposed health authorities are actively involved in promoting the addition of fluoride to drinking water as well as incorporating its use in toothpaste and other measures which are supposed to prevent tooth decay.

Virtually all fluoridated toothpastes including those marketed specifically for children in the United States could be lethal to children under 9 years of age if they were to ingest the toothpaste. The currently accepted minimum lethal dose for fluoride is 5 milligrams of fluoride for every 2.2

**F** Fluorine  
 Atomic Number: 9  
 Atomic Mass: 19

pounds (kilogram) of body weight.

One tube of a popular child's toothpaste has 143 milligrams of fluoride-enough to possibly kill a 63 pound child. This is the reason that one will often find something like the following warning on a tube of toothpaste: "Do not swallow. If more than used for brushing is accidentally swallowed, get medical help or contact a Poison Control Center right away."

The dental profession tends to treat fluoride as if it affects only one tissue: the teeth. Unfortunately, this is not the case. Fluoride alters the way the brain develops and functions. It also interferes with thyroid function by depressing tissue levels of iodine.

REFERENCE:

<http://www.fluoridealert.org/health/accidents/lethal.html#toothpaste>

FLUORIDE AND THE BRAIN

Research of the impact of fluoride on brain development has been actively suppressed in the United States. Dr. Phyllis Mullenix demonstrated the toxic effects of fluoride in her laboratory in the 1990's. She developed a new, more accurate system for analyzing the effects of chemicals on the brain and nervous system called the Computer Pattern Recognition System.

Dr. Mullenix received high profile funding and consulting jobs with industrial giants until she began studying the impact of fluoride on nerve function at the Forsyth Dental Center. She headed up the Department of Toxicology at Forsyth for 11 years. The senior staff at Forsyth was concerned that they would lose funding

if she published her findings on fluoride. She did so anyway. She lost her position at Forsyth after publishing the results of her study which established fluoride at a potentially neurotoxic substance. (<http://www.sonic.net/~kryptox/history/hodge.htm>)

Other nations have been much more active in studying the toxic effects of fluoride than has the United States. The Chinese have paid particular interest to the topic as they have had repeated experiences with fluoride toxicity. Let me just summarize a handful of these studies.

A Chinese study found that high fluoride exposure altered neurotransmitters and receptors in brain tissue to a statistically significant degree.

The average IQ of 320 children in the village of Biji was 100.24. The city has 4.55 mg of fluoride per liter (F/L). The average IQ in the control village of Jiabei where the fluoride content was .89 mg F/L was 104.03. This is a significant difference of almost 4 IQ points.<sup>1</sup>

Another investigation of 7-13 year old children suffering with excessive fluoride exposure as a result of coal burning found that IQ's and intelligence were significantly lower among those suffering excessive fluoride exposure.<sup>2</sup>

One of the mechanisms by which fluoride appears to put mental functioning at risk is by its interference with iodine utilization. Fluoride appears to be most harmful when iodine intake is inadequate.<sup>3</sup>

IQ scores of children from villages with high fluoride and low iodine are clearly lower than those from children with low iodine alone. Average IQ in the areas with low iodine alone was 85 while average IQ where a high fluoride low iodine situation existed was 64.8.<sup>4</sup>

Zinc is another nutrient influenced by fluoride. A study of 157 children ages 12-13 found that early, prolonged exposure to high

fluoride decreased mental work capacity. Levels of hair zinc also fell. There is a direct correlation between mental work capacity and hair zinc.

The researchers felt that fluoride inhibited absorption of zinc. The high fluoride-low zinc combination appeared to alter the neurotransmitters in the brain in such a way that the brain was overstimulated interfering with tasks that require attention and memory.<sup>5</sup>

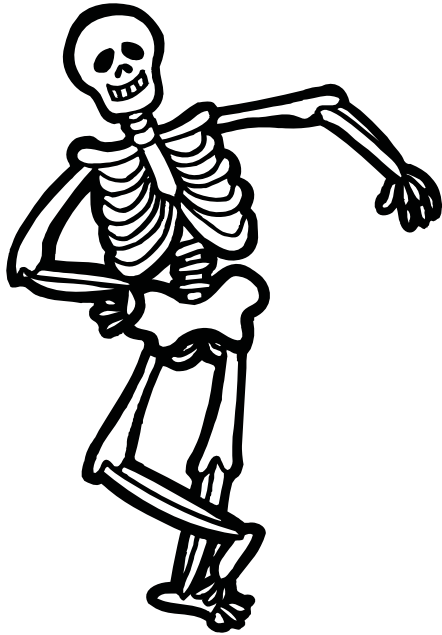
The region of Baotou in China experiences persistent fluoride poisoning. The IQ of children who had developed fluorosis while living in this area was found to be 8.12 points lower than children without fluorosis (88.67 vs 96.79).

In November of 2006 the American Dental Association, long the major promoter of fluoridation, issued a warning that baby formulas for infants under one year of age should not be mixed with fluoridated water. Unfortunately, water districts that fluoridate the water often failed to pass this message on to mothers.

REFERENCES

1. Chen, Yongxiang, et al, Research on the intellectual development of children in high fluoride areas, *Fluoride* 41(2)120-124.
2. Guo, Xianchi, et al, A preliminary investigation of the IQs of 7-13 year old children from an area with coal burning-related fluoride poisoning, *Fluoride*, 41(2)125-128.
3. Hong, Fugui, et al, Research on the effects of fluoride on child intellectual development under different environmental conditions, *Fluoride* 41(2)156-160.
4. Dali, Ren, et al, A study of the Intellectual ability of 8-14 year-old children in high fluoride, low





iodine areas, *Chinese Journal of Control of Endemic Diseases* Vol. 4, No. 4, 251.

5. Yun, Li, et al, The effects of high fluoride intake on child mental work capacity and preliminary investigation into mechanisms involved, *The Journal of West China University of Medical Sciences* 1994;25(2):188-191.

6. Li, Yongping, Effects of endemic fluoride poisoning on the intellectual development of children in Baotou, *Fluoride* 41(2)161-164.

## FLUORIDE AND BONE

Excessive exposure to fluoride causes an arthritic bone disease called fluorosis. In its early or mild forms this abnormality can be easily diagnosed as osteoarthritis or other forms of arthritis.

The potential toxicity of fluoride is influenced by how much is absorbed and how much is excreted. Poor kidney function increases toxicity. Nutritional deficiencies also increase toxicity. Low intake of calcium is widely recognized as increasing the risk of fluoride toxicity. Deficiency of vitamin C also increases toxicity of fluoride.

Excess accumulation of fluoride in the bone will often produce joint pain and stiffness before bone changes are seen by x-ray. Weakening of the bones is also evident before bone changes are evident.

Among the earliest signs of

skeletal fluorosis are arthritis of the spine and small joints of the hands and fingers. Common symptoms include low back pain, painful or stiff joints, knees, elbows, and hips. Excess fluoride exposure tends to be identified with some form of arthritis by most physicians and it is difficult to identify the difference. The calcification of tissues characteristic of osteoarthritis is common with excess fluoride exposure.

Fluoride has also been shown to increase the risk of bone fractures.

### REFERENCE:

Faccini JM, Teotia SPS. (1974). Histopathological assessment of endemic skeletal fluorosis. *Calcified Tissue Research* 16: 45-57.

## FLUORIDE AND IODINE

Iodine is a very important mineral. Excesses over one gram a day can cause hyperthyroidism. Serious deficiency results in goiter, a swelling of the thyroid gland.

In 1854 fluoride was found to cause goiter in dogs. Fluoride inhibits the ability of the thyroid gland to concentrate iodine. Fluoride is also much more toxic when iodine is deficient. Iodine supplementation facilitates excretion of fluoride and bromine which is also toxic.

I am often asked by people what program I would recommend for detoxification. Fluoride and bromine, which is ingested with brominated white flour and brominated fruit juices, are two very toxic substances well worth protecting oneself against. David Brownstein, an iodine researcher, found that supplementation with iodine increased bromide excretion by 50% and fluoride excretion by 78%.

One of the potential problems with fluoride of greatest concern is its tendency to depress thyroid function. Some thyroid experts have suggested that up to 40% of the American population has low thyroid function.

The thyroid gland helps the body produce energy. The conse-

quence of low thyroid is decreased energy production which can manifest itself in a number of ways. For example, those with low thyroid often are intolerant to cold and suffer with cold hands and feet. Low energy production tends to slow down the operation of the digestive tract contributing to constipation.

Weight gain is common when the thyroid function is inhibited. Muscles tend to be weak and fatigue can be profound. The brain does not work at peak efficiency when the thyroid is not working well. Depression, inability to concentrate or poor memory may develop.

Physical signs of low thyroid can include dry skin, puffy eyes or swelling of the eyelids, throat pain or hoarseness, and brittle nails. Heart function can be compromised with low thyroid function. The heartbeat can slow down and there is a tendency to develop high cholesterol and high blood pressure.

Iodine and the thyroid play a key role in immune function. Many years ago physicians found that iodine improved resistance to viral infections. Broda Barnes observes that laboratory animals and people are unusually susceptible to bacterial and viral infections if thyroid function is low. Iodine (and proper thyroid function) probably ranks second only to vitamin D as a critical nutrient for resistance to cold and flu viruses. Resistance to bacteria and viruses drops dramatically with deficiency of three key nutrients: iodine, vitamin D, and of course vitamin C.

I Iodine

Atomic Number: 53

Atomic Mass: 126.9





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### TESTING

Dr. Broda Barnes developed a test a number of years ago to assess low thyroid. It involves taking the temperature under the arm first thing in the morning. A temperature more than one degree below normal body temperature can reflect low thyroid. Details of this test can be found in my book *Your Body's Sign Language* or in the work of Dr. Barnes.

Old time doctors also had a test for the need for iodine. They would paint the skin of a patient with iodine and observe how long it took for the iodine to disappear. The more rapidly the iodine disappeared from the skin, the greater the likelihood that the patient would benefit from iodine supplementation.

There are more modern assessments for thyroid and iodine, but these are possible for an individual to do easily and painlessly. Some of the more frequently performed thyroid assessments will miss thyroid problems that are obvious with more elaborate testing.

### REFERENCE:

Brownstein, David, *Iodine*, West Bloomfield, Michigan, Medical Alternatives Press, 2006, 118.  
Barnes, Broda, *Hypothyroidism: The Unsuspected*

*Illness*, New York: Thomas Crowell Co., 1976, 30, 91.

### PROTECTING ONESELF

The first step in protecting oneself and one's family from fluoride toxicity is to avoid intake of fluoride itself as much as possible. This means finding an alternative to fluoride toothpaste and seeking out water that has had part or all of the fluoride removed.

The second step is to supplement with the nutrients which protect us from the toxic effects of fluoride. The following supplements would provide a measure of protection against fluoride toxicity.

**Super C:** Vitamin C is known to protect against fluoride toxicity. The sustained release of this product dramatically boosts blood levels of the nutrient.

**Chelated Cal-Mag:** Low calcium intake increases fluoride toxicity. Chelated minerals are more easily used by the body due to the amino acid tag which is attached to them. Magnesium is probably also helpful with fluoride toxicity since it boosts cellular energy production.

**Supplements with zinc and iodine:** Both of these nutrients appear protective against fluoride

toxicity. Most GNLD multiples (Active 40+, Sports 30, Stress 30, Formula IV Plus) contain both iodine and zinc. Chelated Multi-Mineral also provides both iodine and zinc as well as other essential minerals.

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