
Dear Mr. Cohen,

Today an e-mail was forwarded to us in which you cited an article by Mark Messina minimizing the link between soy foods and thyroid dysfunction. Apparently you are not aware of the vast literature on thyroid dysfunction caused by soy foods, nor of Dr. Messina's position as a consultant and promoter for the soy industry. It is unfortunate that so much dis-information and misunderstanding exists around such vital health issues. Too often it seems that scientific information is twisted and turned in order to fit a pre-set agenda.

DOUBLE STANDARD

Soy promoters often operate under a double standard, condemning a substance in milk while praising the same compound when it occurs in soy. One egregious example is that of Insulin-like Growth Factor-1, or IGF-1. You have been very vociferous in your condemnation of rBGH milk because it contains high levels of IGF-1, a compound that has been implicated as causing breast cancer. However, you are silent when it comes to the IGF-1 levels in soy. When they are found in soy, promoters describe them as a benefit for bones. This is similar to the promotion of fluoride by the dental profession, while ridiculing its serious adverse health effects.

According to findings reported by researchers Arjmandi and Khalil, April 2001, soy increases serum IGF-1 levels. They took 64 healthy men and randomly assigned them to two groups, one that consumed 40 g of milk-based protein a day for three months and the other that took in 40 g of soy-based protein on the same schedule. Urine and blood samples showed that both groups experienced an increase in a substance associated with bone formation known as insulin-like growth factor-1. [1]

The group consuming soy protein had significantly more of this growth factor, according to Arjmandi. He and Khalil presented their findings at the Experimental Biology 2001 meeting in Orlando. "This is the first study to show that soy may benefit skeletal health in males," Arjmandi is quoted as saying. It is unbelievable that an increase in IGF-1 levels could ever be interpreted as something "beneficial," as there are over 1900 studies on MEDLINE alone clearly showing the implications of IGF-1 in hormonal cancers. Such is the double standard we find in health research science.

As you know, IGF-1 is released from the liver in response to growth hormones, etc. They act co-dependently with thyroid hormones on many biochemical activities, especially with thyroid stimulating hormone (TSH).

FLUORIDE AND ALUMINUM

Our own concern is the high amounts of fluoride and aluminum in soy formula. We deal with fluoride poisoning in children from many different sources, including soy foods. Soy formula is extremely high in both fluoride and aluminum, as you may verify by the references listed below. Fluoride not only causes increased IGF-1 levels,[2] but acts additively with IGF-1. [3]

When infants were fed soy formula there was an increase of 200 percent in autoimmune thyroid disease as compared to breast-fed infants. [4]

More than a decade ago, Dabecka and McKenzie from Health Canada did some surveys on fluoride, lead, cadmium, and aluminum content in soy formula. [5, 6] In canned, ready-to-use formulas, lead, cadmium and fluoride levels averaged 37.3, 1.50, and 840 ng/g, respectively. In concentrated liquid
formulas, the respective levels were 21, 3.54, and 600 ng/g. In powder formula concentrates, respective levels were 73.7, 6.78, and 1130 ng/g.

They reported that aluminum content in soy formula for 1-3 month old infants could result in an intake of 363 micrograms/kg/day (2088 micrograms/day) alone, not including potential contribution from other foods or water. [5] They also reported that soy based or milk-free formulas contained about 8-15 times more cadmium than milk-based formulas,[6] as well as high amounts of fluoride, which, of course, has been known for a long time now. (By the way, cadmium will also cause exactly the same enamel condition as "dental fluorosis".)

Ekland in 1999 reported that cadmium was 6 times higher in soy formulas than cow's milk formulas. [7] Hawkins and colleagues found mean aluminum concentrations of 534 micrograms/L in soy formula, as compared to 9.2 micrograms/L in breast milk. [8] These authors concluded that infants may be at risk from aluminum toxicity when consuming formula containing more than 300 micrograms/L.

In 1986 a research team headed by McGraw reported in The Lancet that, compared with carefully collected human breast milk containing 5 to 20 micrograms per liter, aluminum concentrations were 10 to 20 fold greater in most cow's milk-based formulas and 100-fold greater in soy-based formulas. [9]

**ZINC DEFICIENCY**

Fluoride and phytates in soy formula will induce zinc deficiency. Rat studies have shown that this zinc deficiency will cause a child to absorb more aluminum into his system in general, and into his brain in particular. Aluminum will be absorbed by competing for binding sites on a zinc-containing ligand. [10]

Casey and colleagues conducted a zinc-loading test investigating the uptake of zinc from human milk, cow's milk and four infant formulas. [11] Female subjects consumed 25 mg of zinc with the milk or formula, the amount of which was calculated to provide 5 gm of protein, after an eight-hour fast. Blood samples were taken prior to (base line) and at 30-minute intervals for three hours after consumption of zinc. The plasma response with human milk was significantly greater than with cow's milk and all the formulas. The response with cow's milk and a cow's milk-based formula was one third that with human milk; responses with a soy-based and two casein hydrolysate-based formulas were even lower.

Compared to breast-fed children, the exposure of dietary cadmium from weaning diets can be up to 12 times higher in children fed infant soy-formula.

The promotion of soy milk as a healthy alternative for adulterated milk must stop, as it has no proper basis in fact. Neither is appropriate for growing children, but soy milk is far worse than any commercial milk product, including milk-based infant formula.

Andreas Schuld, Parents of Fluoride Poisoned Children (PFPC) Vancouver, BC, Canada

**REFERENCES**


**SIDEBAR ARTICLE**

**INSULIN-LIKE GROWTH FACTOR-1**

Insulin-like Growth Factor is produced in the liver in response to growth hormone (GH). Milk from cows treated with rBGH has greatly increased levels of IGF-1 compared to milk from untreated cows – this is the main reason why rBGH was not allowed in Canada. Elevated (as opposed to normal) levels of IGF-1 in the blood have been shown to be risk factors for breast, prostate and colon cancers. Soy promoters have used this fact to denigrate milk (without making a distinction between commercial milk and unprocessed milk from pasture-fed cows). But soy products also increase levels of IGF-1. One explanation is the high levels of fluoride-aluminum compounds, which can act as growth hormone analogs, stimulating the body to produce high levels of IGF-1.

[www.westonaprice.org/soy/notmilk.html](http://www.westonaprice.org/soy/notmilk.html)