
The Wolff-Chaikoff Effect: Crying Wolf?

by Guy E. Abraham, MD

Shortly after the Axis Powers capitulated and World War II came to an end, UC Berkley dropped a bombshell in 1948, which became known as the Wolff-Chaikoff (W-C) effect.¹ Where the swords of many nations failed, the pen of two men succeeded. The pen is mightier than the sword indeed. The most effective way to destroy a nation is to remove iodine from the food supply. The W-C effect resulted in the removal of iodine from the food supply and most likely caused more misery and death in the US than both world wars combined due to its negative impact on iodine consumption by the US population and on the use of inorganic, non-radioactive iodine in medical practice.²⁻⁴ "If you can't beat them, join them, and destroy them from within."

The W-C effect is supposedly the inhibitory effect of peripheral inorganic iodide (PII) levels equal to or greater than 0.2 mg/L (10^{-6} M) on the organification of iodide by the thyroid gland of rats, resulting supposedly in hypothyroidism and goiter. These rats never became hypothyroid and thyroid hormones were not measured in their plasma. Nevertheless, the W-C effect, which did not even occur in the rats, was extrapolated to humans. The correct interpretation of the results obtained in rats from the W-C experiments is: Iodide sufficiency of the thyroid gland was achieved when serum inorganic iodide levels reached 10^{-6} M, as we previously discussed.²⁻⁴ These law-abiding rats refused to become hypothyroid and instead followed their normal physiological response to the iodide load. They were unjustly accused of escaping from the W-C effect. Labeling these innocent rats as fugitives from the W-C effect was a great injustice against these rodents.

To the disgrace and stupidity of the medical profession, US physicians swallowed the W-C forgery uncritically, which resulted in a moratorium on the clinical use of inorganic, non-radioactive iodine in effective amounts. However, this moratorium did not include toxic organic iodine-containing drugs and radioiodide. The iodophobic mentality prevented further research on the requirement for inorganic, non-radioactive iodine by the whole human body, which turns out to be 100-400 times the very recently established RDA.²⁻⁴ Prior to World War II and the W-C publication, US physicians used Lugol so-

lution safely, effectively and extensively in both hypo- and hyperthyroidism.³ Wolff and Chaikoff acknowledged the excellent and dramatic results achieved consistently with the use of Lugol solution in hyperthyroidism.¹ But they postulated erroneously that these results were due to the fictitious W-C effect. In the discussion section of their publication, Wolff and Chaikoff¹ stated: "Ever since the introduction of iodine therapy for the treatment of Graves' disease by Plummer in 1923,⁶ the mechanism by which iodine brings about a dramatic remission of signs and symptoms in patients suffering from this disease has attracted considerable attention ... we do believe that our findings, even though they deal with normal thyroid tissue, justify the conclusion that an interference in organic binding of iodine by the gland is an integral part of the mechanism by which iodine brings about a remission in Graves' disease."

Wartofsky, *et al*⁵ in 1970 evaluated the effect of Lugol solution, administered at five drops (30 mg iodine/iodide) three times a day in five thyrotoxic patients. Following a well-designed protocol, they reported, "It is concluded that the rapid decrease in T_4 secretion induced by iodine is not the result of an acute sustained inhibition of T_4 synthesis (the Wolff-Chaikoff effect), but rather results from an abrupt decrease in the fractional rate of thyroid T_4 release." Therefore, in hyperthyroidism, iodine/iodide in Lugol at a daily dose of 90 mg induced a physiological trend toward normalization of thyroid function, a beneficial effect, not the fictitious W-C effect as proposed by Wolff and Chaikoff. It is amazing that the W-C effect, which is still mentioned in iodophobic publications, has never been confirmed in rats by other investigators and has never been demonstrated in any animal species.

In 1948, there was already evidence that the W-C effect, if it was for real in rats (and it was not), did not occur in humans. The Lugol solution and saturated solution of potassium iodide (SSKI) were used extensively in medical practice for patients with asthma. The recommended daily amount was 1,000-2,000 mg.⁶ This amount was used in patients with asthma, chronic bronchitis, and emphysema for several years. Hypothyroidism and goiter were not common in this group of patients. Those amounts of iodine would have resulted in serum inorganic iodine levels 100 times higher than the serum inorganic iodide levels of 10^{-6} M claimed by Wolff and Chaikoff to result in the W-C effect.³

The most quoted reference for the validation of the W-C effect in humans is not the original 1948 publication, but a review by Wolff in 1969, with the title "Iodide goiter

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and the pharmacologic effects of excess iodide,” published in the *American Journal of Medicine*.⁷ This article was obviously addressed to clinicians, and coming from the National Institute of Health gave it credibility. Since it was published in a medical journal, physicians assumed that the W-C effect had been demonstrated in human subjects, as insinuated by Wolff in his review. The expressions “iodide goiter” and “excess iodide” were used effectively by clinical endocrinologists in their publications to create the iodophobic mentality now prevalent in the medical community.³ For example, what is considered “excess” by endocrinologists represents only 3% of the average daily intake of iodide by 60 million mainland Japanese, a population with a very low incidence of cancer overall, and in particular of the female reproductive organs.² Just think how healthy our population would be if the average consumption of iodine/iodide by supplementation was in the range consumed by mainland Japanese, i.e., in the range recommended by US physicians in the form of Lugol solution before World War II.³

In the first paragraph of the 1969 publication, Dr. Wolff⁷ stated the purpose of his review: “This review concerns itself with the effects of excess iodide, i.e., amounts greater than those needed for the production of normal amounts of the thyroid hormones ... a rough estimate of the daily iodide requirement for man would be about 200 µg of iodine per day.” So, now, we know that Dr. Wolff defined excess iodide as daily intake above 200 µg and with the implication that the only need for iodide by the human body was for the synthesis of thyroid hormones. This review was published before the RDA for iodine was established in 1980 and confirmed in 1989.⁴ Dr. Wolff⁷ arbitrarily defined four degrees of iodide excess.

First Degree Excess: Iodide levels slightly above 200 µg/day qualify for first degree excess. “Positive iodine balances may be prolonged and lead to considerable increases in hormone stores.” In 1964, five years before Wolff published his review, Koutras, *et al*⁸ from Scotland published a well-designed study to look into that possibility. They administered potassium iodide to normal subject for 12 weeks in daily amounts of 100 µg, 200 µg, and 800 µg. There was a proportional increase in iodide uptake by the thyroid gland, but not greater than 6-7 mg iodide over the 12-week period. Peripheral thyroid hormone (PBI) did not change appreciably. The authors stated: “From our evidence, it appears that, with all the doses used, the thyroid took up about 6-7 mg of iodine before an equilibrium with the new PII (plasma inorganic iodide) was reached.” Regarding the W-C effect, the authors stated: “There is no evidence that the same mechanism is also responsible for the decreased

iodide utilization which accompanies small increases in the PII levels.” Wolff made no reference to Koutras’ paper, although it was published in the *Journal of Clinical Endocrinology*, not an obscure journal.

Second Degree Excess: “A larger amount which can inhibit iodine release from the thyrotoxic human thyroid gland.” What is wrong with that? Before the introduction of the toxic goitrogens, the thiocarbamide drugs, the Lugol solution was used extensively during the early and mid 1900s in medical practice for the treatment of hyperthyroidism and with good results. With daily intake ranging from 6 mg to 180 mg iodine, a success rate as high as 90% was achieved,³ saving patients’ thyroids from radioiodide and the toxic goitrogens.

Third Degree Excess: “A slightly greater intake which leads to inhibition of organic iodine formation and which probably causes iodide goiter. This is the so-called Wolff-Chaikoff effect.” Dr. Wolff seems to contradict himself. “The rarity of iodide goiter in the face of the extensive exposure of a great many patients to iodide has not been satisfactorily explained.” Without preconceived ideas, it is easily explained — inorganic, non-radioactive iodine is safe. “The demonstration of the Wolff-Chaikoff effect in man remains presumptive.” The demonstration of the W-C effect in any animal species remains presumptive.

Concerning iodide goiter, Wolff stated: “The most common form of iodide goiter is that seen in Hokkaido.” The Japanese authors investigating the Hokkaido goiter did not think iodide was the cause of the thyroid enlargement since Japanese subjects from Tokyo without goiter excreted similar levels of iodide in their urine.^{9,10} Excess goitrogens in the diet of those subjects could explain their normal thyroid function in the presence of goiter, and this problem has since been solved. In 1994, 27 years after the original publication by Suzuki, *et al*,⁹ Konno, *et al*¹¹ stated: “Kelp-induced endemic goiter was reported to occur in the coastal regions of Hokkaido nearly 30 years ago. Such goiter has now disappeared.” Please note that Konno, *et al* called it “kelp-induced goiter” whereas Wolff called it “iodide-goiter,” without any evidence that iodide was the cause. Wolff blamed iodide for the Hokkaido goiter without any scientific data, and further, he stated that this iodide goiter was probably caused by the W-C effect, a double assumption.

Fourth Degree Excess: “Very high levels of iodide which saturate the active transport of this anion.” We have previously demonstrated from a review of the literature that saturation occurs at 50 mg iodide per day in
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human adults² and thyroid uptake of iodide reached a maximum of 600 µg/day. That level was maintained when higher amounts of iodide were ingested. Essentially the thyroid iodide transport system will pick up increasing amounts of iodide as peripheral iodide levels increase, but up to a point. When saturation is reached, however, thyroid hormone levels were maintained within normal limits.

Let us recapitulate by defining the W-C effect. When normal rats are injected with a single intraperitoneal dose of potassium iodide mixed with radioiodide tracer, in amounts five times or more greater than the total amounts of iodide measured in the thyroid gland of those rats, the organic binding of radioiodide by the thyroid becomes undetectable as long as serum levels of inorganic iodide are maintained above 19 µg percent (10^{-6} M). As we previously discussed,² radioiodide uptake by the thyroid gland should be zero when stable (non-radioactive) iodide sufficiency of the thyroid gland is achieved. Therefore, the so-called blockage of organification of radioiodide by the thyroid gland when serum inorganic iodide reached 10^{-6} M is really the amount of serum inorganic iodide needed for thyroid sufficiency.² There is no blockage of organification of stable iodide by the thyroid gland.

The fictitious W-C effect initiated the iodophobic era, which is still alive and well more than 50 years later. This was the beginning of the end of inorganic, non-radioactive iodine in the form of Lugol solution, used extensively by pre-World War II US physicians for both hypo- and hyperthyroidism.³ What was it about this publication that caused the capitulation of US physicians who exchanged Lugol solution for thyroid hormones in iodine deficiency-induced hypothyroidism and simple goiter and for toxic goitrogens and radioiodide in iodine deficiency induced hyperthyroidism? The answer is medical iodophobia, the fear of using and recommending inorganic, non-radioactive iodine in amounts previously used safely and effectively in medical practice. What was it in the 1948 Wolff-Chaikoff publication¹ and in Wolff's review⁷ that resulted in medical iodophobia? The answer is that they were iodophobic publications. What is an iodophobic publication? It is a publication that promotes iodophobic misinformation in order to discourage the use of inorganic, non-radioactive iodine in the proper amount. What is the goal of discouraging the use of inorganic non-radioactive iodine in the proper amounts? If you want to destroy a nation, remove iodine from their diet. It is that simple. This is a form of domestic bioterrorism, called iodophobic bioterrorism.

Medical iodophobia resulted in the thyroid hormone thy-

roxine replacing iodine in iodine deficiency-induced simple goiter and hypothyroidism. Thyroxine has been the most prescribed drug in the US for several years. So, the manufacturers of thyroxine benefited tremendously from this deception. It also resulted in the destruction of the thyroid gland by means of radioiodide in patients with hyperthyroidism caused by iodine deficiency, although this condition had previously been treated successfully with Lugol solution.³ The radioablation of the thyroid gland with radioiodide resulted in 90% of these patients becoming hypothyroid within the first year and eventually joining the ever-increasing thyroxine-consuming population.³

Supplying thyroid hormones to iodine-deprived individuals masks the iodine deficiency and results in a population of zombies, capable of performing physical work but not able to think and reason properly. For maximum effect, combine iodine deprivation with goitrogen saturation, using the potent goitrogens bromide, fluoride, and perchlorate in the food and water supply. This population of zombies then becomes easily influenced through repetition and subliminal programming to believe lies and deception even in the spiritual sphere. Iodine deprived Christian America became vulnerable to the pagan influences of Eastern Mysticism, and New Age Occultism, which were incorporated in the practice of medicine and adopted by the public at large. Eighteen million Americans practice yoga, a form of worship of the Hindu god, Shiva.

Iodine is involved in many vital mental and physical functions, and yet whole body sufficiency for iodine has never been determined. Why? Medical textbooks discuss inorganic, non-radioactive iodine only in relation to the most severe deficiencies of this essential element: cretinism, hypothyroidism, and endemic goiter. Based on an iodine/iodide loading test developed by the author to assess whole body sufficiency for iodine, the amounts of iodine needed for whole body sufficiency and optimal physical and mental health are 250-1,000 times higher than the amount of iodine needed to control cretinism, hypothyroidism, and endemic goiter.³⁻⁴

The use of optimal amounts of iodine in the prevention of cancer of the female reproductive organs was proposed by Stadel, from the National Institute of Health in 1976, 29 years ago.¹² So far, no such study has been published. There seems to be a moratorium on iodine research in effective amounts, thanks to the W-C effect. Dr. B. Eskin has attempted to reproduce in human subjects his excellent results on iodine and breast cancer observed in female rats.¹³⁻¹⁵ He proposed clinical studies

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in human subjects using iodine in amounts based on bodyweight equivalent to those observed to be effective in the rats. He was told this could not be done because of the W-C effect.¹⁶

The W-C effect combined with medical stupidity has caused enough damage. It is time US physicians and other health care professionals wake up and realize that they have been deceived. They should stop crying Wolff and shake off the W-C effect. They need to stay awake and alert because the Axis Powers will strike back once they realize that the Wolff-Chaikoff forgery has now been exposed and US citizens are now waking up to the fact that they have been deceived by agents of foreign powers planted at strategic positions in academia and the regulatory agencies.

Since our series of publications exposing the damaging effect of medical iodophobia,^{2-4, 17-20} there is evidence that the Empire has put into action its damage control team. We have previously documented the relatively high intake of iodine by mainland Japanese with a mean daily intake of 13.8 mg.² This amount was confirmed by spot urine samples from a large group of mainland Japanese.²¹ This author calculated that Japanese fetuses are exposed to maternal serum iodide levels of 10^{-5} M to 10^{-6} M, which is the ideal range for optimal function.⁴ Mainland Japanese are one of the healthiest populations on earth.² Over 95% of the iodine consumed by mainland Japanese are obtained from seaweed. By removing seaweed from the Japanese diet, their daily intake of iodine would drop 100-fold and would reach the low levels of intake observed in the US.

If iodine gains publicity as the active ingredient in seaweed, protecting mainland Japanese from the degenerative diseases of the Western World, this would be a deathblow to iodophobic bioterrorism. In order to maintain the iodophobic mentality, it is necessary to keep emphasizing the toxicity of iodine in seaweed; and then, divert attention from the fact that iodine is the active ingredient in seaweed against cancers of the female reproductive organs and against many of the diseases of Western civilization. In your list of possible bioactive anticarcinogenic substances in seaweed, avoid mentioning iodine. This is a form of doublespeak. Seaweed is bad for you because it contains the toxic element iodine; seaweed is good for you because of some unknown factors protecting you against breast cancer, but more research is needed. This kind of confusion works effectively in a population that is already iodine deprived. It would become totally ineffective if the target population becomes iodine sufficient because the improved cognition induced by iodine sufficiency would render this de-

ception very transparent.

With the above information as background, let us now examine iodophobic propaganda in action. There are two major ways that this is being done.

- 1) Emphasizing the toxicity of iodine in seaweed using newborns and children as victims to get the greatest emotional impact.
- 2) Diverting attention from the fact that iodine is the active ingredient in seaweed against the carcinogenic effect of estrogens on female reproductive organs and against many other diseases of the Western World while pointing to some other factors in seaweed eliciting these beneficial effects.

And to do all this effectively, they make sure the iodophobic publications get wide coverage on the Internet.

Emphasizing the Toxicity of Iodine in Seaweed

Newborns as Victims: In the December 2004 issue of *Thyroid*, Japanese investigators²² reported that out of 37,724 Japanese infants screened for congenital hypothyroidism, 34 infants had elevated serum TSH levels. Out of the 34 infants, no cause could be found for 15 cases, so the authors decided that in these 15 cases, the cause of elevated TSH was due to “excess iodine” intake by the mothers during pregnancy. The authors stated: “We detected no other cause of hyperthyrothrophinemia among these 15 infants.” Did they really look for other causes? Nishiyama, *et al*²⁰ did not fail to mention the fictitious W-C effect as the cause of elevated TSH and reduced thyroxine in these 15 infants even though these infants had normal free thyroxine levels and Wolff and Chaikoff never demonstrated elevated TSH and low thyroxine in their rats, and for that matter in any animal species: “Because of antithyroid effects of an iodine excess, the so-called Wolff-Chaikoff effect, which blocks the uptake of iodine by the thyroid gland, leads to reduced T₄ and increased TSH.” According to Wolff,⁷ iodine intake of 2 mg or more is considered “excessive and potentially harmful.” So, Nishiyama, *et al*²² divided those 15 infants into two groups: one group with maternal intake of iodine below 2 mg and another group with maternal intake above 2 mg. However, in both groups, the reported intake of iodine by the pregnant women was much lower than the national average intake of iodine.²

Nishiyama, *et al*²² reported that their so-called control group of pregnant women ingested only 0.25-0.48 mg iodine/day, which is within the range of iodine intake in the US. Women in their control group were asked to

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abstain from seaweed for a few days. How convenient! In the mothers who supposedly ingested “excessive iodine” from their diet, the amount of iodine ingested was 5-10 times lower than the national average intake by mainland Japanese.^{2,3} Normal thyroid hormones and TSH were observed in these women. All 15 infants from these mothers had normal serum free T₄ levels. The physical and psychomotor developments of the 15 infants were normal. After centuries of consuming safely large amounts of iodine from seaweed, why would iodine in seaweed suddenly become toxic to mainland Japanese? The data presented in Nishiyama’s publication do not justify the alarming implication of the title of that publication. The expression “excessive iodine intake” is taken from Wolff’s review.⁷ More than 50 years after the Wolff-Chaikoff forgery, it is still quoted in iodophobic publications.

Children as Victims: Shortly after the publication on “excess iodine” in newborns,²² another publication in the *American Journal of Clinical Nutrition*²³ reported that urine iodide concentrations greater than 0.5 mg/L was associated with increased thyroid volume in multiethnic groups of children between six and 12 years old. Analysis of the data in Table I of that publication revealed only children from Hokkaido, Japan showed increased thyroid volumes of significance compared to the other groups: 2.16 to 2.59 ml for all the other groups; and 2.86 and 4.91 ml for the 2 groups from Hokkaido. This area of Japan is known to have a high incidence of euthyroid goiter. Suzuki, *et al*⁹ first reported this finding in 1965 but did not think that iodine was the cause of this goiter. He commented: “Considering the paucity of reported cases of iodine goiter with the widespread usage of iodine medication, we cannot exclude factors other than excessive intake of dietary iodine as a cause of the goiter.”

Diverting Attention from the Anticarcinogenic Effect of Iodine in Seaweed

Based on an extensive review of breast cancer epidemiological studies, R.A. Wiseman²⁴ came to the following conclusions: 92-96% of breast cancer cases are sporadic; there is a single cause for the majority of cases; the causative agent is deficiency of a micronutrient that is depleted by a high fat diet; and if such an agent is detected, intervention studies with supplementation should lead to a decline in the incidence of breast cancer. It is the opinion of several investigators that this protective micronutrient is the essential element iodine.² Demographic surveys of Japan and Iceland revealed that both countries have a relatively high intake of iodine and low incidences of simple endemic goiter and breast cancer. Whereas in Mexico and Thailand, just the reverse is ob-

served — a high incidence of both endemic goiter and breast cancer.²⁵ Thomas, *et al*^{26,27} have demonstrated a significant and inverse correlation between iodine intake and the incidence of breast, endometrial, and ovarian cancer in various geographical areas. Thyroid volume measured by ultrasonometry and expressed as ml is significantly larger in Irish women with breast cancer than controls with mean values of 12.9±1.2 in controls and 20.4±1.0 in women with breast cancer.²⁸ Intervention studies in female rats by Eskin¹³⁻¹⁵ are very suggestive of a facilitating role of iodine deficiency on the carcinogenic effect of estrogens and a protective role of iodine in maintaining normality of breast tissues. The risk for breast cancer is higher in women with fibrocystic disease of the breast (FDB), and iodine supplementation is effective against FDB.²⁻⁴

With this background of extensive information on the beneficial roles of iodine in seaweed against breast cancer, one would expect that a publication dealing with the protective role of iodine-rich seaweed against breast cancer would mention iodine as a possible factor in the list of bioactive substances. Here comes toxicologist Skibola, from U.C. Berkeley, the birthplace of the Wolff-Chaikoff effect. In the August 2004 issue of *BMC Complementary and Alternative Medicine*,²⁹ Skibola reported the effect of brown seaweed on menstrual cycle length and hormonal status in three pre-menopausal women with short menstrual cycles and prolonged menstrual flow. The seaweed was administered orally in a powder form compounded in gelatin capsules (seaweed supplements). In all three women, administration of seaweed resulted in a prolongation of the menstrual cycle, a decrease in menstrual flow, a marked drop in serum estradiol 17-B levels, and a marked increase in serum progesterone.²⁹ In the list of potential substances in seaweed capable of eliciting such a beneficial effect on the ovaries, iodine was not mentioned once. In fact, the word “iodine” was completely omitted in the publication. The amount of iodine in the seaweed used in her study was not reported. In a subsequent publication, Skibola, *et al*³⁰ reproduced in female rats the results obtained with seaweed in women. Again they failed to mention iodine as a possible factor involved in the results obtained. These results reported by Skibola demonstrate a dramatic effect of seaweed on the ovaries of these women, normalizing ovarian function. The element iodine was reported by Russian scientists 40 years ago to elicit a similar effect in normalizing ovarian function in women with cystic ovaries.³¹

Two Russian scientists³¹ published in 1966 their results regarding the effect of oral administration of potassium

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iodide in daily amounts equivalent to 10-20 mg elemental iodine, on 200 patients with "dyshormonal hyperphasia of mammary glands." They postulated that this form of mastopathy was due to excess estrogens from ovarian follicular cysts which were caused by iodine deficiency. The duration of iodine supplementation of their patients varied from six months to three years. Within three months, there was significant reduction of swelling, pain, diffuse induration, and nodularity of the breast. In five patients with ovarian follicular cysts, there was a regression of the cystic ovaries following five months to one year of iodine supplementation. Ghent, *et al*³² obtained similar results in FDB treated with iodine. We have observed similar responses to iodine supplementation at daily amounts of 50 mg iodine in the form of Lugol tablets in patients with polycystic ovary syndrome, resulting in the regularization of the menstrual cycle.² Why Skibola chose to completely ignore iodine in her publications remains a mystery. Next to the thyroid gland, the ovaries contain the largest concentration of iodine.³³ A sodium iodide symporter is present in the ovaries. This ovarian symporter is blocked by goitrogens. There is overwhelming evidence that iodine is the active ingredient in seaweed, eliciting the effects observed by Skibola on the ovaries of women.

Most Internet users do not go further than the information supplied on the Web. Rarely do they search further in the original studies. So, what is on the Net about Skibola's studies? In an interview with Amy Norton,³⁴ Skibola did mention iodine as a potentially toxic substance: "Adding seaweed to the diet is probably going to be beneficial," Skibola said. However, she offered a word of caution about the kelp supplements sold at health food stores. Kelp contains high amounts of iodine, as well as low levels of heavy metals, and taking the seaweed in supplement form makes it easier to get too much of these potentially toxic substances. According to Skibola, kelp is not recommended for women who are pregnant or nursing, or for people with an overactive thyroid gland."

Here, we have a perfect example of doublespeak. Skibola, who became an instant expert on iodine, advises against kelp supplements sold in health food stores because of the presence of the toxic substances iodine and heavy metals. Yet, she used in her studies, seaweed supplements made up of seaweed powder obtained from the same company that sells bulk seaweed powder to manufacturers who supply seaweed capsules to health food stores. Skibola is very concerned about toxic substances, such as iodine in seaweed from health food stores, but she never reported the levels of iodine present in the seaweed she used in her studies. Is that a double standard? Atlantic seaweed used extensively by the

health food industry as a source of iodine, contains approximately 0.4% iodine (dry weight), that is 4 mg iodine/gm seaweed. In her studies of pre-menopausal women, she used a daily amount of 0.7-1.4 gm. Therefore, the daily intake of iodine in her study subjects would be 2.8 mg to 5.6 mg/day. That is the amount of iodine used by Ghent, *et al*³² to successfully treat FDB. Her recommendations to pregnant and nursing mothers to avoid seaweed, applies only to American women, not mainland Japanese women who regularly consume iodine rich seaweed during pregnancy and lactation. According to Skibola, people with overactive thyroid gland should avoid seaweed because of the toxic element iodine. Remember the Wolff-Chaikoff effect? You can't be too careful. Skibola may not be aware that prior to the Wolff-Chaikoff publication, US physicians used iodine in Lugol solution, extensively, safely, and efficiently to treat overactive thyroid glands with as high as 90% success rate.³ Even Wolff and Chaikoff quoted the successful use of iodine to treat hyperthyroidism in the discussion of their publication.¹

To wrap it up, proper amounts of iodine in the food supply is the greatest asset of a nation. Removing iodine from the food supply is a form of domestic bioterrorism. Supplying daily intake of iodine for whole body sufficiency (100-400 times the RDA) gives protection^{2,4} against goitrogens and radioactive iodine/iodide fall out; improves immune functions, resulting in an adequate defense system against infection; decreases singlet oxygen formation which is the major cause of oxidative damage to DNA and macromolecules, resulting in an anticarcinogenic effect in every organ in the human body; results in a detoxifying effect by increasing urinary excretion of the toxic metals lead, mercury, cadmium, and aluminum, as well as the goitrogens fluoride and bromide; normalizes hormone receptor functions resulting in improved response to thyroid hormones both endogenous and exogenous; and results in better control of blood sugar in diabetic patients; stabilizes cardiac rhythm, obviating the need for the toxic sustained release form of iodine, amiodarone; and normalizes blood pressure without medication in hypertensive patients. Iodine deficiency is the major cause of cognitive impairment, worldwide.² Therefore, iodine sufficiency would result in optimal cognitive function. A properly functioning gray matter is the greatest asset of a nation, and the greatest weapon against iodophobic bioterrorism.

The worst form of domestic bioterrorism is the dissemination of iodophobic misinformation in order to discourage the use of adequate amount of iodine for whole body sufficiency (orthoiodosupplementation).^{2,4} Today, the

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public relies heavily on the Internet for health information. Rarely do they search for the original publications. Whoever supplies health information on the Internet controls the health of the Internet user. Control of health information on the Internet by iodophobic bioterrorists is a real threat to a population who depends on this source of information to make health-related decisions. Such a population is vulnerable and most likely will end up adopting iodophobic decisions to their detriment. Once caught in the iodophobic Net, it becomes a vicious cycle, difficult to exit.

Iodophobic bioterrorism can be prevented through education of health care professionals and the public at large. Remember that the easiest and most effective way to destroy a nation is the removal of iodine from the food supply. Iodophobic bioterrorism is a real threat to our nation, and the enemies within our gates masquerade as guardians of our thyroid gland.

About the Author

Guy E. Abraham, MD, is a former Professor of Obstetrics, Gynecology, and Endocrinology at the UCLA School of Medicine. Some 35 years ago, he pioneered the development of assays to measure minute quantities of steroid hormones in biological fluids. He has been honored as follows: General Diagnostic Award from the Canadian Association of Clinical Chemists, 1974; the Medaille d'Honneur from the University of Liege, Belgium, 1976; the Senior Investigator Award of Pharmacology, Sweden, 1980. The applications of Dr. Abraham's techniques to a variety of female disorders have brought a notable improvement to the understanding and management of these disorders. Twenty-five years ago, Dr. Abraham developed nutritional programs for women with premenstrual tension syndrome and postmenopausal osteoporosis. They are now the most commonly used dietary programs by American obstetricians and gynecologists. Dr. Abraham's current research interests include the development of assays for the measurement of iodide and the other halides in biological fluids and their applications to the implementation of orthiodosupplementation in medical practice.

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