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## Iodine: Its Role In Health and Disease

### Some New Exciting Concepts

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#### Introduction

Guy Abraham MD, former professor of obstetrics, gynecology and endocrinology at UCLA School of Medicine, has written a series of papers about iodine that has drastically changed my thinking about its role in health and the prevention and treatment of disease. I had been impressed by Dr. Abraham's previous work, which showed that vitamin B6 and magnesium could be very helpful to women with premenstrual syndrome (PMS) and was eager to learn what he had to say about iodine. Through a series of articles (See website link at the end of this article), termed "The Iodine Project," Dr. Abraham has proposed that the optimal daily dose of iodine for a person is approximately 12.5 mg, which is 100 times the RDA of 0.125 mg. He believes that the current prevailing medical opinion that more than 2 mg a day of iodine is toxic is wrong. He traces the source of this major blunder to a scientific experiment on rats that was published in 1948 by Drs. Wolff and Chaikoff, which erroneously concluded that iodine inhibits the thyroid gland at doses of about 20 times the recommended daily allowance (RDA) for iodine. This conclusion was later generalized to humans and can be found in medical textbooks, including endocrinology and nutrition textbooks.

The commonly accepted medical opinion is that iodine's only role in the body is to help make thyroid hormones. Although this is an extremely important function, Abraham demonstrates that the role of iodine in the body goes far beyond its function of making thyroid hormones. Other possible functions include: helping to regulate moods, preventing cancer (especially in breasts, ovaries, uterus, prostate and thyroid gland), preventing and treating fibrocystic breasts in women, helping to regulate blood pressure, helping to regulate blood sugar and prevent and treat diabetes, and helping to prevent abnormal cardiac rhythms. For example, Japanese women, who have one of the lowest breast cancer rates in the world, ingest more than 13 mg of iodine daily from seaweed without suffering any adverse consequences. He further demonstrates that iodine tends to be antibacterial, antiviral, antiparasitic, and antifungal and that it enhances immune function. Furthermore, he suggests that suboptimal iodine intake may contribute to various thyroid abnormalities commonly seen today, including hypothyroidism (underactive), hyperthyroidism (overactive) and autoimmune inflammation of the thyroid (Hashimoto's Disease).

#### Therapeutic Uses of Iodine Prior to World War II and Different Forms of Iodine

Dr. Abraham started this Iodine Project around 1998 when he became aware of the many benefits of treating patients with iodine using doses far beyond the 2 mg a day, which most physicians consider to be potentially toxic. He noted that starting in the 1820s, the French physician Jean Lugol used these higher doses to treat a wide variety of conditions. Dr. Lugol combined elemental iodine (5%) and potassium iodide (10%) with 85% water. Since iodine kills infectious agents, Dr. Lugol successfully treated many infectious conditions with this solution, which became known as Lugol's solution, and which is still available today by prescription. Prior to World War II, many American and European physicians used Lugol's solution to treat thyroid conditions, using doses higher than 2 mg daily without apparent significant adverse effects.

Dr. Abraham notes that research has shown that the thyroid gland prefers to utilize the iodide form of iodine, while other organs, such as the breast and ovaries, prefer the elemental form of iodine. Both of these forms are present in Lugol's solution and in the

preparations discussed below. After World War II, the use of Lugol's solution came to a grinding halt due to the publication of the Wolff-Chaikoff paper mentioned above and for other reasons discussed in Abraham's papers. Dr. Abraham then suggests that the disease known as "Iodophobia" developed, which he describes as the irrational fear of prescribing iodine in dosages that had previously been used successfully by physicians for decades. He points out in his preface to Dr. David Brownstein's book *Iodine: Why You Need It; Why You Can't Live Without It*:

"Of all the elements known so far to be essential for human health, iodine is the most misunderstood and the most feared. Yet, iodine is the safest of all the essential trace elements, being the only one that can be administered safely for long periods of time to large numbers of patients in daily amounts as high as 100,000 times the RDA. However, this safety record only applies to inorganic, nonradioactive forms of iodine. Some organic iodine containing drugs are extremely toxic and prescribed by physicians. The severe side effects of these drugs are blamed on inorganic iodine although studies have clearly demonstrated that it is the whole molecule that is toxic, not the iodine released from it."

### **Determining if a Person is Iodine Sufficient and Treatment Dosages**

In his excellent short book on iodine, Dr. Brownstein summarizes his own clinical experience with hundreds of patients for whom he has prescribed iodine with excellent results and minimal side effects. To determine whether a patient is iodine sufficient, he uses the iodine-loading test described by Dr. Abraham and now in use at the Schachter Center. This was the test that Abraham used to determine if a person had an optimal amount of iodine in his/her body. Other research had shown that iodine is readily absorbed when ingested orally and readily excreted in the urine. The assumption was that if a person ingests a given amount of iodine and is iodine sufficient, most of the iodine should be found in the urine over a 24-hour period. On the other hand, if the person does not have an optimal amount of iodine in his body, when he ingests the iodine, his body will tend to hold onto it and a smaller amount will be found in the urine during the 24-hour collection period.

To do this test, a patient first empties his bladder and then ingests 50 mg of iodine/iodide (to be discussed further below). The patient then collects his urine for the next 24 hours and a sample of it along with a note that includes the total volume collected is sent to an appropriate laboratory. If the person excretes 90% or 45 mg of the iodine, he is considered iodine sufficient. If less is excreted, the patient is not optimally sufficient or is iodine insufficient and a therapeutic dosage of iodine may be administered for a period of time, after which the test is repeated. Dr. Brownstein has found in using this test, that more than 90% of his patients are iodine insufficient. Once a person is iodine sufficient, the maintenance dose for an adult to maintain sufficiency is about 12.5 mg of iodine/iodide daily. The treatment dose when a person is iodine insufficient is generally between 12.5 mg and 50 mg daily. Preliminary research indicates that if a person is iodine insufficient, it takes about 3 months to become iodine sufficient while ingesting a dosage of 50 mg of iodine and a year to become iodine sufficient while ingesting a dosage of 12.5 mg of iodine daily. However, the patient needs to be monitored closely with awareness of possible side effects and detoxification reactions

Another way of testing for iodine sufficiency is by painting an area of skin with tincture of iodine. It should take between 18 to 24 hours or more for the body to absorb the red or orange iodine stain if the person is iodine sufficient. If the iodine patch absorbs more quickly, the likelihood is the person being tested is not iodine sufficient. This method is probably not as accurate or quantitative as the iodine-loading test with the subsequent collection of the 24-hour urine.

The dosage of about 12.5 mg of iodine daily can be obtained with 2 drops of Lugol's solution or as an identical over-the-counter solution. This same dosage is also available over-the-counter in tablet or capsule. Each capsule or tablet or 2 drops of the Lugol's solution contains 5 mg of the reduced elemental form of iodINE (preferred by the breast, ovary and prostate) and 7.5 mg in the iodIDE form (preferred by the thyroid gland). Numerous testimonials indicate that many patients improve many symptoms with optimal supplementation of this supplement.

This dose of iodine may have other benefits as well. Dr. Abraham has shown in his work that iodine promotes the excretion of toxic minerals, such as lead, mercury, and cadmium as well as the toxic halogens fluoride and bromide. In the May 2005 edition of *Nutrition and Healing*, Jonathan V. Wright, MD notes that his laboratory has also shown that iodine helps remove toxic elements, including bromide and fluoride, from the body. With this mobilization of toxic elements, patients may develop temporary side effects, such as fatigue

and irritability, which can be reduced by lowering the dosage of iodine and making sure that other aspects of nutrition and nutritional supplementation are in place. A physician knowledgeable about iodine who can order appropriate tests when necessary should monitor this procedure.

At the Schachter Center, we investigate virtually all patients for possible iodine insufficiency, as we believe that iodine insufficiency can cause or contribute to many symptoms and illnesses. The use of iodine offers tremendous potential in helping patients with depression and many other symptoms, especially those associated with the thyroid gland. One patient who I've been following for episodes of depression for a few years had developed significant hair loss for several months, which was unresponsive to thyroid hormone supplementation, biotin, extra protein and other measures that I usually recommend for hair loss. On a dosage of 37.5 mg of iodine for 6 weeks, this condition completely cleared and also helped to stabilize her mood.

### **Potential Therapeutic Benefits of Iodine in Many Conditions**

Iodine's role in helping to prevent and treat cancer needs much more exploration and research, but there is suggestive evidence that it plays a role in preventing and/or treating cancer (especially involving the thyroid gland, breasts, prostate, ovaries and uterus). Max Gerson MD, whose successful alternative therapy involved using fresh vegetable juices and intensive detoxification, recommended iodine containing Lugol's solution for all of his cancer patients.

At the Schachter Center, we are reevaluating all of our current patients who suffer from fatigue, depression and any type of thyroid dysfunction or disorder, including hypothyroidism (underactive thyroid gland), hyperthyroidism (overactive thyroid gland) and chronic thyroiditis (Hashimoto's disease). So far, we have found that most of these patients are iodine insufficient, using the iodine loading, 24-hour urine iodine test. Adding iodine to the program of these individuals seems to be helping many of them. All new patients are also being checked for iodine insufficiency. For more information on the thyroid and hypothyroidism, read the article on our website ([www.schachtercenter.com](http://www.schachtercenter.com)) by clicking on Literature and Articles and then the article "Hypothyroidism".

### **Factors that Aggravate Iodine Insufficiency**

Iodine insufficiency problems are aggravated by our use of agents that interfere with the utilization of iodine (sometimes called goitrogens because they may cause an enlargement of the thyroid gland). These include the halogens (class of chemicals to which iodine belongs) fluoride, bromine and bromides, and chlorine. Fluoride, added to 50% of the U.S. water supplies, is also present in most toothpastes, and is used in fluoride dental treatments for children. It is also present in many processed foods and beverages. Fluoride can interfere with iodine utilization. For more information about fluoride, check out the article "The Dangers of Fluoride and Fluoridation" on our website. Bromine replaced iodine in most baked goods in the 1980's because of the concern that iodine might be toxic. In fact, it is the bromine that is toxic and which can also interfere with iodine utilization. Bromine is also used to clean hot tubs and is present in many medications. Chlorine, used to treat swimming pools and present in many of the public drinking water supplies, also interferes with iodine levels in the body. Safer water purification systems, like ozone and iodine, itself, exist, but are currently not widely used.

Most people get iodine in their diet from seafood and iodized salt. However, only about 50% of Americans use iodized salt and because of concerns about high blood pressure, many people have reduced their salt intake. One gram of salt contains 77 mcg of iodine. Because of the high chloride content in table salt, some experts estimate that only about 10% of the iodine in iodized salt is actually absorbed. The recommended daily allowance (RDA) of iodine is 150 mcg (somewhat higher for pregnant women and certain other groups). Though 150 mcg daily may be sufficient to prevent an enlarged thyroid (goiter) and cretinism (severe iodine deficiency in babies leading to mental retardation and impaired development), these values are far short of the optimal values of 12,500 mcg (12.5 mg) recommended by Dr. Abraham. But, even using the lower values, many people still do not get the RDA and tests have shown that the average blood levels of iodine have decreased significantly over the past 30 years, in part no doubt, due to the substitution of bromide for iodide in baked goods in the early 1980's.

According to the last national nutritional survey (NHANES III 1988-1994), 15% of the U.S. adult female population is iodine deficient, as defined by the World Health Organization: levels of iodine/iodide below 50 mcg/L in collected urine. Therefore, 1 in 7 women in the U.S. are frankly iodine deficient. Keep in mind that these figures are much lower than those found by using the iodine loading test and 24-hour urine collection for iodine discussed above.

All things considered, I think that the therapeutic use of iodine/iodide has the potential of drastically changing how medicine is practiced today. All of Dr. Guy Abraham's research papers relating to the Iodine Project may be viewed and downloaded free from the Internet by accessing [the Optimox website](#) and clicking on Iodine Research.

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**Important Note:** You are encouraged to seek the advice of a competent medical professional before making any decisions that could affect your health. See our [disclaimer](#).

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