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I've been experimenting with iodine repletion. ~15 or so years ago, I was aware of a number of people that swore that iodine repletion really helped with their afib. As standard of care says that iodine, in levels not far above the RDA is toxic, I had a hard time reconciling this. February 2022, I decided to dig in and try to understand those who advocated for much higher doses of iodine. It took me till around June before I had a reasonable understanding of the protocol being advocated, though I'd started increasing my iodine before that. I should note there are a number of docs who've clinically treated thousands of patients in this way.

My initial reason for investigating this was my subclinical hypothyroidism.

## **Iodine repletion**

Don't start just supplementing with mg doses of iodine. At a minimum, highly suggest reading Dr. Brownstein's iodine [book](#). Brownstein is an integrative doc in Michigan. I respect his work. Also watch this [webinar](#) by Brownstein on iodine & autoimmune thyroid disorders. Lastly, much of the following is taken from the [Iodine Truth Group Announcements](#) (see the posts by Jimmy Bertram, Moderator). Iodine repletion can cause bromism if done without a salt flush. Can also cause thyroid issues if the cofactors, especially selenium, are not optimized. Pay attention to the background materials in this document.

Quick notes (see details below). Start with a salt flush (see protocol below) two weeks prior to starting iodine to avoid bromine toxicity. Also start companion nutrients (co-factors) at this time (see above salt flush). Iodine should be liquid Lugol's solution (60% iodide 40% iodine), iodine will evaporate from tablets. Should start low (6.5 mg/day) and work up to 50 mg/day or more. Iodine should be consumed quickly in cold or room temperature water (not hot coffee or tea!), 45 minutes away from anything else, including the salt.

Iodine is repleted when there is 1.5-2.0g I in the body. A [24-hour urine test](#) can indicate sufficiency when at least 90% of the iodine consumed is excreted in the urine.

When iodine is supplemented, it will displace other halides (Bromine, Chlorine, Fluorine). Rapid displacement of Bromine can induce toxic bromism in the body. The way to get around this is to salt load for two weeks prior to taking iodine. The chloride in the salt will slowly displace the bromine and get it out of the body. Fluorine/fluoride & bromine/bromide are halide ions that compete with iodine in the body. With sufficient iodine, the body can be purged of these. Excess bromine (which is ubiquitous as a fire retardant in clothes, carpet & furniture can be toxic). Hence a sea salt detox (AKA salt loading/flush) is suggested for two weeks prior to and optionally while taking the iodine, but to separate the salt water and everything else from the iodine by at least 45 minutes.

Salt loading: multiple times/day take 1/2 tsp sea salt (Celtic) in ½ cup water followed by bunch more water (see detailed protocol below).

[Cofactors to be started two weeks before iodine supplementation.](#)

B2 Riboflavin 100 mg

B3 Niacin 500 mg (Inositol Hexanicotinate)

Vitamin C ascorbic acid 1,000-3,000 mg/day

Magnesium 600-800 mg/day (amount of elemental Mg, not the compound - or bowel tolerance)

**Selenium 200 mcg (as selenomethionine), suggest RBC selenium blood test result be maintained at or above upper reference value, but not excessive**

### **Salt loading/flush protocol**

Salt load for 2 weeks together with companion nutrients without Lugol's. Take the companion nutrients listed above and cofactors separated from salt loading by 45 mins (no Lugol's iodine during salt loading period).

In the morning :

1/2 teaspoon celtic sea salt mixed with warm water and coupled with another 16 Oz of water.

30 minutes later consume another glass of water (without salt)

If no "frequent" urination occurs, continue drinking water every 30 minutes until urination.

Follow the same step in the evening.

The total amount of daily intake for salt loading is 1 teaspoon.

"The salt loading {flush} protocol is used to displace bromine (detox) from iodine receptors in the body so iodine, when supplemented, can take its rightful place on iodine receptors and restore proper health and function to the cells, organs and the body as a whole. Bromine and chlorine have been used in warfare for many decades. During the bitter, trench warfare of World War 1 many chemicals were used to clear the trenches both by the French and Germans. Xylyl Bromide is a caustic and toxic tear gas that was used to clear the trenches. Those that didn't die immediately would be taken to a military hospital incapacitated by blindness, chemical burns and lungs that would fill with fluid which usually ended in death. There was no viable treatment for what was termed bromism or bromide poisoning. After much trial and error the salt loading protocol was discovered by an American army doctor as a result of his attempts to treat servicemen for bromine gas exposure. He found patients that he treated with intravenous normal saline (sodium chloride) or salt water infusions were getting better where those that weren't were getting

worse and dying. He experimented with different routes of delivering the sodium chloride (Salt) and found that adding more salt to food didn't have the expected result as it did when he added salt to a small amount of water and had the patient drink it in a bolus or gulp. He reserved the intravenous normal saline infusions for the worst cases of bromism and prescribed salt loading with a small amount of salt in room temperature water orally to the majority with great success. This salt loading protocol continues to be utilized by militaries around the world to this day.

### **ION-DIPOLE INTERACTION:**

Mixing of sodium chloride, NaCl (table salt), and water represents an example of an ion-dipole interaction. Na and Cl atoms are joined together by ionic bonds in salt molecules and tightly packed to form the dry crystalline solid. Dissolving NaCl in water is a process initiated by the attraction of water molecules to salt atoms in the solid. Specifically, negative and positive ends of water's dipole are attracted to Na and Cl atoms in a process called hydration. Hydrated atoms then dissociate from salt molecules and become Na<sup>+</sup> and Cl<sup>-</sup> ions in a true solution. Once dissolved in water, Na<sup>+</sup> and Cl<sup>-</sup> ions remain strongly associated with water molecules and approximately 6–7 water molecules are attracted to each ion. The solubility of larger solutes, such as proteins, can be greatly increased when hydrated salt ions are attracted to their ionic surfaces.

Each atom of iodine requires two atoms of sodium in order to be taken up into the cell, this is the sodium/iodide symporter system (NIS) which transports iodine into the cells etc.

Our bodies remove excess water and toxins/waste by filtering the blood through our kidneys. This requires a balance of sodium and potassium (the sodium-potassium pump system) in the body to pull the water across the wall from the bloodstream into a collecting channel in the kidney and eventually excreted in urine.

Salt is sodium and chloride. The reason salt loading works is two fold: First the sodium component causes an increase in cellular uptake of fluids into the kidneys and the chloride, a halogen that displaces bromide when taken in high enough concentration, part of salt displaces bromine and puts it into circulation. Chloride also competes with bromide at the kidney level and increases the kidney's removal of bromide from blood circulation. As that circulation crosses the kidneys, the bromine is filtered out by the kidneys to be excreted in urine along with excess water, also known as detoxification or detox. The chloride crowds out the bromide and kicks it off of the iodine receptors temporarily taking the place of the bromine on the iodine receptors. This is what we call detoxing bromide from the body. Because the chloride is only one step up from bromide on the periodic table the detoxification is much slower than if one goes straight to using Lugol's without salt loading and will greatly reduce or eliminate the terrible transient side effects of bromide detox symptoms.

Bromine detox articles: [one](#) & [two](#).

Bromism or bromine toxicity. [Why bromine is bad](#)

Bromism. “Additional treatment of bromide toxicity has traditionally involved saline loading (administration of large quantities of sodium chloride in water, typically by vein), which enhances kidney excretion of bromide. The chloride ion from sodium chloride competes with and replaces the bromide ion throughout the body. While the usual half-life of bromide (the time for half the body's complement of bromide to be eliminated) is 12 to 14 days (Horowitz, 1997), a half-life of 65 hours has been calculated with saline loading. “ [Source](#) “

**“Symptoms of Bromide Detox From the Guide :**

Fatigue

[Cherry Angiomas](#)

Headache Sluggishness / Lethargy

Rash

Tremor

Impaired Memory/Concentration

Bromoderma (acne) on face and hands

Disturbance of color perception

Impaired Memory/Concentration

Irritability

Abnormal pigmentation

Slurred Speech

Emotional Instability

Hair loss

Vision changes

Depression

Runny Nose

Reflex changes

Schizophrenic-like actions

Metallic Taste

Sensitivity to light

Hallucinations

Diarrhea / Constipation

Eyelid twitching

Dream changes

Increased salivation

Extensor Plantar Responses

Anxiety

Kidney pain

Dry mouth

Body Odor / Sweating”

Hashimotos thyroiditis and selenium, [Part 1](#), [Part 2](#), [Part 3](#), [Selenium & thyroid, more good news](#)

Iodine should be Lugols solution, not tablets because of iodine evaporation. Lugols is not a brand, it is 60% iodide and 40% iodine. It should be taken in cold/room temperature water and 45 minutes away from anything else. It can evaporate quickly and even more so at high temperatures (don't put in coffee). “The influence of ambient temperature on the evaporation of iodine is significant. [Within the first minute, the losses of iodine by evaporation are 10-15% at 9° C; 18-25% at 24° C; and 35% at 37° C.](#)” [One source of Lugol's.](#)

TSH will commonly increase for 6 or more months when iodine is first supplemented. This is normal. The increase of iodine causes an increase in circulating T4 which causes the temporary rise in TSH which triggers NIS (Sodium/Iodide Symporter) to take up iodine which signals the thyroid to decrease conversion of T4-T3 in medicine it's called the iodine lock or iodine trap.

[Dosing Iodine from Lugols solution](#) (mg/drop)

Iodine should be started at 6.5 mg/day for a week. Then double to 13 mg/day for a week. Then double to 25 mg/day for a week then 50 mg/day and continue at this level.

In Dr. Brownstein's clinical practice, iodine allergy is very rare. Appears to be an issue with organic iodine (like Amiodarone) or radioactive iodine (like contrast solutions).

[Iodine literate practitioners](#)

[Iodine papers from the late Dr. Guy Abraham](#)

[24 hour iodine urine loading test](#) (stop supplementing iodine for 4 days prior to testing, then follow instructions). A person is sufficient in iodine when  $\geq 90\%$  of loading dose appears in urine. Testing for bromide, chloride and fluoride available at the same time at additional cost. Many do not do this test till having supplemented for 6 months or more. Dr. Brownstein found 96% of patients tested as insufficient on first test.

“Here's a [video](#) that explains why proper salt loading works. I will oversimplify the process; when sodium chloride (salt) NaCl is placed into water the sodium and chloride molecules are separated which provides for very fast and efficient uptake of the two components by the stomach to be utilized by the body for the purposes of detoxification of the bad halides. The reaction DOES NOT happen if you put extra salt on food. The reaction DOES NOT happen if you put salt into a capsule. The reaction DOES NOT occur if you put salt on your

tongue and swallow it down with water. THE REACTION ONLY OCCURS WHEN YOU DISSOLVE THE UNPROCESSED/UNREFINED SALT IN WATER (not in water with broth. Not in water with lemon. Not in water that contains ANYTHING other than JUST WATER.) IF YOU CHANGE THE CHEMISTRY YOU CHANGE THE REACTION.”

[another video](#)

“Among the improvements first noticed by iodine protocol participants is a mood lifting and/or complete resolution of refractory lifelong depression. A proposed mechanism of action has always been that iodine, as well as all the other halogens, crosses the blood brain barrier and removes bromine from the synaptic gaps thereby improving nerve electroconductivity and communication within the nerves and the brain itself. There are added synergistic effects that also contribute to the resolution of refractory depression that may be caused by Endotoxemia; iodine also gives the leaky gut the tools to repair itself and iodine gives the body the tools it needs to remove toxins and pathogens from the body. It all boils down to iodine being a wonderful tool to resolve depression without big pharma's pills and all of their side effects. “ [Source](#)

“This is a message from a 69 year old man that I've been coaching on the iodine protocol. He started in March 2020. He follows coaching to the T. His doctor had him scheduled for a prostatectomy and to start chemo the week after he reached out to me which he refused. He still has his prostate intact, he never received chemo and he can urinate "a stream like when he was a teenager, on demand." His doctors can't figure it out because he hasn't told them that he's on the iodine protocol. He intends to inform them at his next appointment in six months. I love these stories... (I expect his PSA to go even lower by his next appointment) [Source](#)  
\*\* PSA stands for Prostate Specific Antigen. It is a blood draw lab test that is used to determine the potential presence of cancer in a man's prostate.”

“Detox simplified. Heavier halides displace lighter halides (that is it. Nothing else) Halides in order of weight, beginning with the heaviest; Astatine (rarest element on earth), Iodine, Bromine, Chlorine, Fluorine. Bromine build up (Bromism) and displacement is 99% of the time what iodine protocol participants call "detoxing.”” [Source](#)

“(THIS IS NOT A SCARE ARTICLE OR ANTI-IODINE, IT'S TO EMPHASIZE THE IMPORTANCE OF SELENIUM) "Evidence from clinical research suggests that excess iodine intake can act as an environmental risk factor for the development of autoimmune thyroid disease in populations of iodine sufficient countries. Similarly, in animal studies high iodine intake may exacerbate a pre-existing autoimmune thyroiditis. It is believed that redundant H<sub>2</sub>O<sub>2</sub> are generated during oxidation and organification of excessive iodine in thyroid cells, leading to elevated oxidative stress and resulting in oxidative cell damage. However, this may occur only if selenium is deficient. Optimal selenium intake exerts a protective effect against iodine- induced

oxidative cell damage by enhancing glutathione peroxidase activity and providing antioxidant protection to the thyroid cell. It appears, that selenium status may play an important role in preventing iodine- induced AT, and that an optimal balance between iodine and selenium is important for maintaining normal thyroid function. It can, therefore, be concluded that an iodine to selenium imbalance, in favor of iodine, may be responsible for the rising trend of AT in iodine sufficient countries.” [Source](#). Another [paper](#) on iodine & selenium.

“The reason salt loading {or salt flush} (sodium chloride) is used for detox with the iodine protocol is due to its properties, sodium and chloride. To understand detox with the iodine protocol one must understand that the detox is a detoxification of certain bad halides. Fluoride, chloride , bromide, iodide are all halides. A more reactive halide displaces (kicks out) a less reactive halide. Iodine is the heaviest halide. So iodine will kick all of the other halides off of receptors in the body where iodine belongs but it does very rapidly causing the signs and symptoms of detox because the kidneys cannot clear and excrete all of the bad halides that the iodine displaced. The Chloride in salt will displace bromide and fluoride at a much slower rate and the sodium part of the salt improves the sodium potassium pump system of the body making the kidneys capable of clearing and excreting the excess bromine from the body. Ain't science cool. (This is an overly simplified explanation so as to make understanding possible.)” [Source](#)

“Here is my last hair analysis that I did on myself. I have only ever done the iodine protocol, nothing else. You won't find a better way to rid the body of heavy metals. Many times in coaching people that are having a difficult time with the iodine protocol I find them on multiple "detox protocols" (heavy metals, mold, parasite etc) that are the reason for their difficulty. The iodine protocol will handle ALL of them without the added confusion.” [Source](#)

{My (author of this document) experience is that iodine also significantly reduced my heavy metals on a hair analysis.}

[The urinary iodine level was significantly lower in women with postmenopausal osteoporosis](#)

Iodine for brain & women's health, [Dr. Jorge Flechas podcast](#).

In **atrial fibrillation** (afib), Amiodarone (an organic compound of iodine) is considered the most effective antiarrhythmic drug. It is also known to have a very negative impact on the thyroid with extended use, as well as other serious side effects. In clinical reports by doctors practicing iodine repletion protocols, iodine is described as solving rhythm issues in patients. Several hypotheses. 1) Would using the salt loading and companion nutrient protocols from supplementing with Lugol's iodine/iodide mitigate the issues with taking Amiodarone (I personally doubt this)? 2) Could using the mineral iodine (Lugol's) with the

companion nutrient protocols be at least as effective as Amiodarone, without its side effects?

Amiodarone has a very long half-life (t 1/2 of several weeks), and **it may take 6 weeks for full clinical effects with oral therapy**. Also, upon discontinuation of amiodarone therapy, pharmacologic effects could continue for 1 to 3 months. [Source](#)

Afib & iodine repletion [case report](#).

Amiodarone is a benzofuranic derivative containing 75 mg I per 200 mg tablet. It is widely used for the long term treatment of cardiac arrhythmia. It is long acting with 100 days half-life and releases 9 mg I daily in patients ingesting the recommended amount. In the United States, Amiodarone induces hypothyroidism in 20% of patients ingesting it. The authors of this review (Roti, E., Vagenakis, A.G., Effect of Excess Iodide: Clinical Aspects. In Werner and Ingbar's The Thyroid – Braverman LE and Utiger R-D. Ed, Lippincott, 316-329, 2000) blamed I for the hypothyroidism although no study has been performed with daily administration of 9 mg of inorganic I in a similar group of patients. It would not be surprising if inorganic I alone in equivalent amount resulted in the same beneficial effects without the side effects, including destructive thyroiditis which require large doses of glucocorticoids and in some cases, thyroidectomy. Actually, there is a large population consuming close to 100 times the RDA almost daily, the Japanese living in Japan. According to the Japanese Ministry of Health, the average daily consumption of seaweed by mainland Japanese is 4.6 gm. At an average of 0.3% I in seaweed (range 0.08-0.45%), that would compute to an average daily intake of 13.8 mg I. Overall, the Japanese living in Japan are among the healthiest people in the world, based on cancer statistics. They have one of the lowest incidence of I-deficiency goiter and hypothyroidism. [Source](#).

[Information on iodine repletion](#).(this document).

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