

The Guide to Supplementing with Lugol's Iodine

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****NOTE:** This document is for educational purposes only. It is not meant to treat or diagnose any medical condition. Please seek the help of a qualified medical practitioner for any medical issues.

1. Forms of Iodine

- a. **Nascent (aka Magnascent, Detoxified or Atomidine)** – Based on Edgar Cayce’s “energized” iodine. The iodine is reduced to a 1% concentration in 100% ethyl alcohol and electro-magnetically transmuted (while being suspended in a wet bath containing a mild acid solution) into the Atomic state. 1 drop = 150 mcg or .150 mg of Iodine. This form will not saturate body tissues and has not been proven to detox halides such as bromide, fluoride, chloride, and mercury, as other forms have.
- b. **Lugol’s Formula** – This is an iodine formula of Iodine and Potassium Iodide (5% Iodine / 10% Potassium Iodide in water). Two drops of this 5% solution contains 5 mg of iodine and 7.5 mg of iodide – or commonly called 12.5 mg in tablet forms. Lugol’s is supplied in milligram (mg) amounts vs other forms that are in micro gram amounts. This is the preferred form of iodine supplementation as the body needs both forms of this nutrient. The thyroid needs iodide and the breasts and prostate need iodine. Many other tissues in the body can concentrate either form. These include glands like the salivary, liver, spleen, kidneys and intestines.
- c. **KELP** – While kelp does contain iodine it is not as high as you might be led to believe. Kelp is a plant that is designed to clean toxins from the sea. Our oceans are getting more and more contaminated with dumping from pharmaceutical and industrial processing companies along with the Fukushima disaster which dumped large amounts of toxic radioactive material into the ocean. Kelp has been tested and found to be high in arsenic. For those concerned with health this is not a viable option.

It is recommended that the user consume Lugol’s formula. This is because it offers the best solution for tissue saturation. When you consider the usage of iodine for thyroid hormone creation plus halide protection, the recommended 150 mcg amount by the RDA falls pathetically short. The body is reported to store 1,500 mgs of iodine in total. The thyroid gland stores 50 mgs. Twenty percent of the total iodine is held in the skin. Approximately 32% of iodine is stored in the muscles. This is why it is believed that there are strong ties to fibromyalgia pain when the patient is iodine deficient.

****NOT GOOD FORMS****

2. How much Iodine do I need to take?

There are no set amounts that can be given as a blanket recommendation. Everyone needs different amounts based on their body’s ability to utilize the nutrients as well as the level of toxic halide exposure they have each day. If you are dealing with a severe health condition then your dosages will need to be higher than those trying to maintain good health.

- a. **Maintenance** – It was once believed that a good maintenance dose is 25 mgs per day. But with more information being gained about the exposures to halides bombarding our systems (bromides, fluorides, chlorine) as well as mercury, etc., maintenance of health may require higher doses of iodine. The iodine doctors are now beginning to believe that 50 mgs may be the minimum required dose. Many iodine group members are finding that dosages of 100 mgs cause them to feel the best. While this is anecdotal information it is interesting to note.

- b. **Pregnancy / Lactation** – Iodine is important for both the mother and the baby. Children who do not receive enough iodine in the womb while developing can develop cretinism. Because iodine has the ability to push toxins out of the body (bromide, fluoride, mercury, and lead) it is not desirable to push this to the blood stream so that it crosses the placenta to the baby. During the 2007 Iodine Conference, the doctors discussed this issue. Their final conclusion was to recommend that iodine be supplemented at 12.5 mgs per day if no prior supplementing / detoxing has been done before getting pregnant. This applies to starting during lactation as well. One thing to note is that the iodine will change the taste of the milk so if the baby refuses the breast, back the dosage down and add slowly so that they can get used to the taste. If there is concern over bromide toxicity then a blood test may be performed to test for circulating levels.
- c. **Cancer** – Cancer is a result of mutated cells. Iodine is absolutely critical for something called the P53 gene which is known as the “keeper of the genetic code”. Without iodine and selenium it will not function correctly to eliminate abnormal cells from the body such as cancer. Cancer patients have taken anywhere from 50 – 300 mgs / day successfully. Here is a good article on how P53 works with the mdm2 in cancer <http://www.sciencedaily.com/releases/2007/10/071015215101.htm> If you would like additional information on the P53 and Iodine see the *Minerals for the Genetic Code* book.
- d. **Children** – These are the levels that I gave my children at the various ages. This is not meant to be a recommendation but a guideline for what was safe for my children and others I have been in contact with. General guidelines suggest .08 mg x the weight of the child but is dependent on the health condition.
 - i. **Up to 3 years** – 3 drops of Detoxified Iodine (www.iodinesource.com) per day or take 1 drop of 5% Lugol’s solution in water and then take ½ of the water and give it to the child. This results in 3.125 mgs / dose.
 - ii. **3yrs to 5 yrs** – 6.25 mgs of Iodoral or 1 drop 5% Lugols Solution(6.25 mgs)
 - iii. **5 yrs to 9 yrs** – 12.5 mgs of Iodoral or 2 drops 5% Lugols Solution (12.5 mgs)
 - iv. **9 yrs to 16 yrs** – 25 mgs of Iodoral or 4 drops 5% Lugols Solution (25 mgs)
 - v. **16 yrs and up** – will depend on health issues, weight, etc and cannot be given in generalities. By this point their body is adult size. Dosages range from 12.5 mgs to 300 mgs.

3. Supporting Nutrients for taking Iodine

These nutrients are required to support the body while supplementing with iodine.

Adult Supporting Nutrients

- a. **Vitamin C** – 2,000 – 5,000 mgs / day
- b. **Selenium** – 200 – 400 mcg / day
- c. **Unrefined salt** (Celtic) – ½ tsp / day – supports adrenals, binds to bromide and assists in removal, supports symporters (sodium iodine symporters or NIS)
- d. **Magnesium** – 200 - 400 mgs / day
- e. **Optional – ATP CoFactors (B2/B3 combo)** -1 tablet 2x / day (Why this is optional discussed later on in this document).

Children Supporting Nutrients (based on my children)

- f. **Vitamin C** – 1,000 mgs per day. We used a children’s chewable.
- g. **Magnesium** – we did not supplement specifically with it but used a good professional grade multivitamin.
- h. **Selenium** – 100 mcg – 3x / week. I purchased capsules and emptied them into applesauce.
- i. **Unrefined Salt** – We use Celtic and Redmond Real Salt. I placed course ground salt and let my children eat it out of the cups and put on their food at will.

4. Why do we take these supplements as part of the protocol?

- a. **Vitamin C** – This nutrient is high in antioxidants and works to buffer the oxidation caused by the detoxing of halides from the cells. Vitamin C is also needed by the symporters and helps to support them in their healing process which allows iodine to more readily enter the cells. See https://optimox.com/pics/Iodine/IOD-11/IOD_11.htm ***Evidence that the administration of Vitamin C improves a defective cellular transport mechanism for iodine: A Case Report*** for additional information.
- b. **Selenium** – Selenium is used by the thyroid in the hormone creation process. There is a selenium containing enzyme glutathione peroxidase which functions to keep the hydrogen peroxide reduced to H₂O after it converts iodide to iodine. This keeps H₂O₂ from damaging the tissues. When selenium is deficient this process of defense is impaired. This can cause oxidative damage to TPO which could be the start of autoimmune thyroiditis.

Selenium is also contained in iodothyronine deiodinase. This is an enzyme that is responsible for the conversion of T₄ to T₃ (inactive to active hormone). A deficiency in selenium would decrease this conversion activity.

Selenium is also needed for glutathione production in the liver which assist with detoxification of the body.

- c. **Magnesium** – This nutrient works as a counter to excess calcium in the cells. When there is excess, the oxidation process can be fueled. Magnesium will minimize the oxidative stress on the cells. This stress can be one part of the autoimmune thyroid issue.
- d. **Unrefined Salt** – The sodium in the salt binds with the bromide that is released by the iodine and carries it out of the body through the kidneys. Unrefined salt contains over 80 minerals and is very supportive of the adrenal glands which can be stressed during the detox process.
- e. **Optional– ATP CoFactors (B2/B3)** – You will see this recommended as a must have for all individuals who are supplementing with iodine. This is not the case. I prefer to teach individuals to start with the basic protocol. This will allow them to know what has helped them on their journey to better health. Adding too many things at one time does not allow the person to know if it helped them or not.

What do the ATP CoFactors do? These two nutrients are needed by the cells to produce more H₂O₂ to assist in the oxidation process of iodine. It also stimulates the NADPH pathway. This is where iodide is converted to iodine. This can be important to

those who suffer from autoimmune conditions such as Hashimotos where the oxidation process creates oxidative stress on the cells. (TPO Abs would be an example of oxidative stress) It can also be considered for conditions like Fibromyalgia where the “energy factories – ATP” are not functioning at optimum levels. Dr Abraham also determined that ATP Cofactors could be beneficial in healing the organification process. (Tg Ab may be an indication of this issue.) This is the binding of iodine to thyroglobulin in the hormone creation process.

This supplement can be considered at the beginning for those struggling with these conditions or the individual may wish to wait to see if they make progress with the basic protocol alone in an effort to keep the cost of supplements down.

5. When should I take my supplements? Do I need to space them apart?

- a. **Iodine** should be taken with food. This seems to enhance absorption as well as protecting sensitive stomachs from a potential upset especially with the liquid form.
- b. Some have expressed concern with combining **Vitamin C and Iodine**. This is because when placed in a container together the color of iodine is removed which signifies a change in chemistry. However, this has never been tested in the body. The stomach environment is different than a glass container. If there is concern on your part, then separate by 30 -60 mins. The tablet / capsule forms of Lugol’s formula should not cause any concern when combining.
- c. All of the **supporting nutrients** can be taken with iodine and with food.
- d. **Iodine** should be taken earlier in the day (**before 2 pm**) because for some it increases energy and wakes up the brain so much that they are unable to sleep.

6. Does iodine destroy good bacteria?

No, you do not need to worry. Iodine functions as an adaptogen – meaning it “knows” what does not belong and works to destroy the bad bacteria in the gut. It does not destroy the good bacteria (probiotics). Remember, this is a natural element and not a drug. Anti-bacterial drugs are broad spectrum in most cases and work by removing all bacteria whether it is good or bad. This is why natural remedies are often the best option.

7. How long should I take Iodine?

Dr. Abraham stated that it would take approximately 6 months of 50 mgs of supplementation to reach 90% saturation. However, as more and more people have done the 24 hour loading test, this is not what has actually occurred. It seems that this level is taking many years to obtain. This depends on the exposure to halides

- a. Diet – are you consuming bromides in your food or drinking water with fluoride
- b. New consumer goods recently purchased – items like automobiles, carpets, electronics and mattresses can be high in bromide which causes exposure.

Supplementing with iodine is a lifetime endeavor. You will not be able to get your required iodine amounts from food our soil because it is depleted.

8. Where can I buy non-liquid Lugol's products?

I offer Lugol's formula supplements on my website and a partner site. Selling iodine and supporting health products allows me to continue to offer free assistance to the members of my iodine groups. Your purchase helps me to continue to do this. Thank you!

- a. www.steppingstonesliving.com/shop/ - This is my website. I offer a variety of iodine products. Products include: **LugoTabs, Iodoral, IodoRX, i-Throid, and Iodine Complex** as well as the supporting nutrients and other health related products. Your purchases help me to continue to be able to support you on the Yahoo and Facebook groups free of charge.
- b. <http://www.cpmedical.net/steppingstonesliving/> - this is also a site affiliated with my practice. It offers **Iodoral** and **IodoRX** and supporting nutrients. You may also be able to have these items shipped to you internationally along with other health products.

9. What is the Salt Loading Protocol?

This is not to be confused with salt supplementing.

Perform the salt loading protocol when you are experiencing detoxification symptoms with iodine supplementation. This protocol was developed by Dr Shevin and shared at the 2007 Iodine Conference.

***Note- You should not need to do this for more than **3 days**. If your symptoms persist then you need to consider reducing your dose of iodine.*

1/2 tsp celtic (or other unrefined) salt in 1/2 cup of warm water
Follow the above with a glass of 12 oz filtered water.

** Repeat every 30-45 minutes as needed until urination begins.

Why does this help?

Salt - containing chloride - binds to the bromide in the blood stream and carries it out through the kidneys.

10. What are the sources of Bromide?

Over and over people come to the Iodine group claiming that they can't possibly be toxic in bromide because they are gluten free, eat a clean diet, etc. Guess what? It isn't diet related in most cases. Bromide is a flame retardant that is used in and on many items around you. These include carpeting, furniture, mattresses, clothing, computers, iPhones, and automobiles – just to name a few. Food sources can include items like baked goods that contain brominated flour or vegetable oil as well as soft drinks like Mountain Dew and other citrus based sodas. It can also be found in some Gatorade products. For many years it was used in the form of Methyl Bromide as a pesticide on strawberries.

11. Validity of the Iodine Patch Test

You cannot consider that you are deficient or sufficient based on the patch test on the skin. There are too many variables that change its absorption. It isn't very scientific. Read the following article by Dr. Abraham for more information

http://www.optimox.com/pics/iodine/updates/UNIOD-02/UNIOD_02.htm

12. My ferritin dropped while on Iodine.

This has been happening to some people taking 50 mgs or more of Iodoral. It has been rectified by adding a B6 – Complex along with an iron supplement to help restore ferritin to normal levels. It is thought to occur due to an increase in metabolic rate that requires more iron. Sufficient ferritin levels (60-70) are needed to create and utilize thyroid hormones. **Please note** that this is not something that happens to everyone so do not worry that it will happen to you. The information is provided to share what might happen and what to do if it does.

13. I am gaining weight since starting Iodine.

Unfortunately this can occur in those that are toxic and have sluggish detox pathways. If your detoxification pathways are not able to eliminate the toxins being released by iodine then your body will buffer them with water and fat. It may be due, in part, to lowered calcium levels as well as magnesium, vit D, and B Vitamins. All work to maintain balance in the cells and eliminate toxins. There are some detox products that can be viewed on my website here: www.stepsstonesliving.com/shop/ under the category of Detoxification that can support your body's ability to detox.

14. Iodine Supplementing & Mercury Filings

While iodine does seem to pull out some mercury from the cells / tissues of the body, there has been no indication that it is dangerous to take iodine while amalgams remain in the body. If there is any concern, supplements like cilantro, chlorella and alpha lipoic acid (ALA) can be used to help bind and carry the mercury out of the body. Consulting with a good holistic / biological dentist as well as a holistic medical doctor can help you to assess your toxicity level and assist you in safe removal of amalgams and chelation.

15. I have Hashimotos. Can I take Iodine?

Yes, Dr. Brownstein believes that low iodine is one the key causes in autoimmune thyroid disease. The following is an excerpt from Dr. Brownstein's Iodine book.

THE UNDERLYING CAUSE OF AUTOIMMUNE THYROID ILLNESSES: IODINE DEFICIENCY AND ANTIOXIDANT DEFICIENCY

Chapter 7 described the apoptotic (i.e., anticancer) effects of the iodinated form of lactone (δ -Iodolactone).

δ -Iodolactone is not only important for preventing cancer, its production is also necessary to help regulate the oxidation of iodine. Figure 3 illustrates this regulatory step in the oxidation/organification of iodine.

As previously mentioned, the oxidation of iodide to iodine occurs through the interaction of H_2O_2 and TPO. Iodine is a necessary product in order to provide the correct molecule in the cell so that organification can occur. If organification does not take place or is blocked, thyroid hormone and iodo-lipids will not be formed. As can be seen from Figure 3, this reaction is controlled by intracellular calcium levels and iodinated lipids— δ -iodolactone.

Intracellular calcium stimulates this pathway. On the other hand, δ -iodolactone and other iodinated lipids act as a brake on the system. If there is not enough iodine in the cell to organify and produce adequate amounts of δ -iodolactone, it can set the stage for damage to the thyroid cell and the development of an autoimmune thyroid disorder such as Hashimoto's or Graves' disease.

A Proposed Mechanism for the Development of Autoimmune Thyroid Disorders

The NADPH oxydase system is found in the mitochondria of our cells. The mitochondria are the energy-producing cells of our body. The mitochondria produce energy (i.e., ATP) through a complex process called oxidative phosphorylation. All medical students (and most physicians) are familiar with oxidative phosphorylation because we have to memorize the many steps responsible for producing ATP. This production of ATP requires many items including: oxygen, magnesium, ADP, and amino acids.

Many people with chronic illnesses, such as fibromyalgia, chronic fatigue syndrome, and autoimmune disorders, complain they have no energy. ATP is the molecule that stores energy for the body. The body is constantly producing and utilizing ATP. Its production is a complex process that is beyond this book. However, there are two cofactors, Vitamins B2 (*riboflavin*) and B3 (*niacin*), that are integral to stimulating oxidative phosphorylation and ATP production.

Hydrogen peroxide is a byproduct of oxidative phosphorylation. It is this production of hydrogen peroxide that is so critical to the oxidation process of iodine. Hydrogen peroxide and TPO help to oxidize iodide to form iodine.

If there is a deficiency in iodine, which is common when ingesting the RDA for iodine, there will not be enough substrate (i.e., iodine) to produce iodinated lipids. As can be seen from Figure 3, the lack of δ -iodolactone and other iodinated lipids results in a loss of the 'brake' in the pathway to oxidize iodide. This may result in a temporarily production of too much hydrogen peroxide. This excess hydrogen peroxide can damage the enzyme TPO.

What Happens If TPO Is Damaged? Autoimmune Thyroid Illness

The body's response to TPO damage is to produce antibodies against TPO or anti-TPO antibodies. A diagnosis of Hashimoto's disease requires the presence of anti-TPO antibodies. As the damage worsens, surrounding proteins can also be damaged such as thyroglobulin. Damaged thyroglobulin will result in the body producing antibodies against thyroglobulin—anti-thyroglobulin antibodies.

In most cases of Hashimoto's disease, there are antibodies to both TPO and thyroglobulin present. Although Graves' disease may also possess these same antibodies, antibody production is not necessary to make the diagnosis of Graves' disease. However, my clinical experience has shown that the treatment for both Hashimoto's and Graves' disease can follow a similar course with similar positive outcomes.

How to Treat Autoimmune Thyroid Disorders

1. Ingest enough iodine in order to provide adequate substrate to iodinate lipids.
 2. Take Vitamins B2 (Riboflavin) and B3 (Niacin) in amounts necessary to stimulate the NADPH system to produce adequate amounts of H₂O₂.
 3. Correct oxidant stress in the thyroid gland and the mitochondria with antioxidants.
 4. Ensure adequate magnesium levels.
 5. Minimize oxidative stress in the body.
-

16. Why does iodine work for Hashimotos?

There are many healthcare professionals that are warning of the terrible consequences for those with Hashimotos who take high doses of iodine. But they are VERY wrong. The lack of iodine is actually part of the reason as to why Hashimotos has occurred. Iodine is needed to support the body in balancing this autoimmune condition. There are several things that you need to look at and consider when listening to these doctors warnings.

- a. **How much iodine do they discuss?** In most cases they discuss microgram (mcg) or low milligram (mg) dosing in the examples they site that had outcomes resulting in disaster. Yes, this is exactly what may happen. In some individuals when given microgram amounts you do "stoke the fire" and cause an increase in antibody attack on the thyroid gland. That's not what we teach.
- b. **Where do they stop their discussion?** In watching many videos and reading the articles of the doctors sounding the alarm, they take iodine through the biological process in the gland where iodine enters the cell and is oxidated from iodide to iodine and then they exclaim – "See the oxidation creates inflammation and that increases antibodies." Right again! But there is one problem. The body's process doesn't stop there. When iodine is supplied in levels OVER what is needed to create thyroid hormones there is a magical substance that is created called iodolipids. These iodolipids are the regulatory factor on the oxidation process. Iodolipids, when created, will put the brakes on the oxidative process before it runs out of control and "burns" the cells creating an inflammatory

response. The body sees inflammation / abnormal cells and creates an antibody attack against them as a natural response. The key is to stop this from occurring.

- c. **Where they go wrong.** Dr. Brownstein has written about this in his book *Iodine Why you Need it Why You Can't Live Without It*. He has determined that when iodine is supplied in amounts 100x the RDA of 150 mcg (or 15 mgs) that the body will begin to create these iodolipids. So you can see that giving microgram amounts causes a big issue for those with Hashimotos. In this case the mantra of “low and slow” can actually create a bigger issue. This causes many to give up on iodine because their condition seems to worsen. So the next time you see a doctor or listen to one that discusses the dangers of high doses of iodine for Hashimotos ask them.... **“What about the iodolipids?”**

17. My TSH went up on Iodine.

This is a common occurrence when a person starts to take iodine after being deficient. The body increases TSH to stimulate production of thyroglobulin which is used to bind to the iodine in thyroid hormone production. TSH is also the method the body uses to stimulate the NIS (sodium iodine symporters) to take iodine into the cells. Individuals can have TSH levels as high as 75 for up to 6 months without clinical signs of hypothyroidism. To monitor your thyroid “health” accurately, labs that check the Free T3 and Free T4 should be run. You will find in most cases that the “frees” are nicely within the ranges while the TSH remains high.

18. I have adrenal fatigue. Can I take Iodine?

Yes, Iodine is used by every gland and mucosal lining and is needed to heal the adrenals. You should also use unrefined salt to support them as well as Vitamin C. Other products such as ashwaganda, licorice root, rhodiola, and adrenal glandulars can help to support the adrenals. In severe conditions a doctor can prescribe hydrocortisone (HC) to replace the body’s deficiency.

19. I have breast cancer and would like to learn more about using Iodine.

The best resources for learning about breast cancer and iodine is the book by Dr. David Derry. It is called *Breast Cancer and Iodine: How to Prevent and How to Survive Breast Cancer*. Dr. Brownstein’s Iodine book also contains valuable information.

20. Bromide Toxicity and Iodine Loading Test.

As the years go by, members of the group have been testing relatively high in their saturation levels with the Iodine loading tests. This is usually met with jubilation that they are at a good level. But wait! This isn’t a place to stop. A bromide level test should be added to the loading test. It is highly recommended because it gives a clearer picture of what the TRUE status of the saturation level is. As a general rule if you see a higher saturation level (80% or above) with a bromide level over 5 mgs/L (the upper limit of normal per Dr. Guy Abraham) you are bromide toxic and the receptors that would normally be able to pull iodine into the cells cannot because bromide is blocking the receptors. Because they are blocked, it would result in a high level of iodine being eliminated in the urine indicating (falsely) that you are more saturated than you are. Persons with results such as these should consider supplementing with Lugol’s formula (liquid or tablet) in doses of 50 mgs or more for 6 mos to 1 year and then retest with the 24 hour Iodine Loading and Bromide level test to see what the new levels are.

Another reason for a false high reading in saturation levels is due to defects in the symporters of the cells. Symporters are the “pumps” that pull iodine into the cells. Dr. Abraham addresses

this on his website at http://www.optimox.com/pics/Iodine/IOD-11/IOD_11.htm which suggests the usage of Vitamin C to heal symporters.

21. Ordering a 24 hour Iodine Loading Test with Bromide Levels.

It is recommended that you order both the 24 hour loading and bromide level test. We recommend this because you may obtain a high saturation level and believe that your levels are fine when in fact bromide toxicity will block the iodine receptors not allowing iodine to enter the cell which results in an elimination of iodine when it is needed / deficient thus skewing the test results.

The following list is a compilation of resources for obtaining the Iodine loading test.

Hakala Research

885 Parfet Street Unit E
Lakewood, CO 80215
877.238.1779

*** It is not recommended that you do the spot test as this is only an indicator of how much iodine is in the diet and the amount that has been ingested in the last 24 – 48 hours. It offers no real value to determining the body saturation level. The two asterisk items are the recommended tests.

** Iodine Loading Kit Only \$70

Iodine Spot Level Kit Only \$70

Iodine Spot and Loading Kit \$95

** Bromide Level Testing (must be combined with one of the above kits) \$35

Test prices do not include return shipping.

They now also offer iodine **serum/saliva testing** to check for Organification / Oxidation issues as well as symporter defects. The test is available two ways:

1. 24 hour Iodine loading test plus the serum saliva ratio cost: \$155.00.
2. Serum saliva ratio without the urine test cost: \$110.00.

The serum/saliva ratio gives the degree of usage of iodine within the cell, if the ratio is below normal this signifies a symporter defect (NIS) while a higher than normal ratio points to an organification problem.

According to Dr. Abrahams articles the symporter can be repaired using 3 gm of slow release Vitamin C per day, the organification issue responds to ATP CoFactors (Riboflavin 100mg + NoFlush Niacin 500mg) twice daily.

FFP Labs

Dr. Jorg Flechas MD
80 Doctors Drive Ste 3
Hendersonville, NC 28792
(1-877-900-5556)

The cost of this test is **\$80**.

If it is not ordered by a physician you must tell them you are ordering it on your own and they will assign you to a nurse practitioner. When you get the results of this test you can receive a free consultation with Dr. Flechas.

You may also obtain a **urine spot test** for an additional **\$30** for a total of **\$110 for both tests**.

Spot / Loading / Bromide test can be obtained for **\$230**

Doctors Data

**** This lab does not seem to report in the manner that is described in Dr. Abraham's research so it is difficult to determine true saturation and bromide levels.**

Pre and post loading - requires an ordering physician.

ZRT Laboratories (No on this one)

This test is not performed in the manner outlined by Dr. Abraham, Dr Brownstein or Dr. Flechas and which has been used effectively since the 1990s. It has not been proven to correlate with the health conditions of those with iodine deficiency and does not offer a bromide level test which is critical in determining how accurate the saturation level is. At this point the Iodine group does not recommend this test.

22. Recommended Reading.

Many of the questions asked over and over are covered in these reference materials. Please familiarize yourself with them to help with limiting the repetition of information on the group. The Brownstein books can be purchased on my website at www.stepsingstonesliving.com/shop/

- a. Dr David Brownstein – Iodine Why You Need It, Why You Can't Live Without it
- b. Dr. David Brownstein – Salt Your Way To Health
- c. Dr. David Derry – Breast Cancer and Iodine: How to Prevent and How to Survive Breast Cancer <http://www.thyroidscience.com/reviews/derry/derry.9.19.09.htm>
- d. www.optimox.com - Research by Dr. Guy Abraham – the founder of The Iodine Project

23. Detoxification

Your body's ability to detoxify chemicals and other toxins from the body is one of the most critical functions in obtaining optimum health. Without the elimination of toxins the entire body will struggle to operate. When your body is bogged down it will work hard to protect you at all costs from these toxins while compromising other functions such as hormone balance, blood sugar control, skin tone and mental clarity, energy and even things like fertility.

Supporting the Detox Pathways

How does the body detox?

1. Skin
2. Lymphatic System
3. Liver
4. Kidney
5. Intestinal System

The liver performs a 2 phase detoxification process:

Phase 1 – This phase consists of oxidation reduction and hydrolysis. Simply put it takes a toxic chemical and turns it into a non-toxic one.

Phase 2 – This pathway is called the conjugation pathway where the liver cells add another substance (like cysteine, glycine or a sulphur molecule) to a chemical that is toxic to the body that renders it less harmful. This makes the toxin water soluble so that it can be excreted easily from the body through the water containing fluids like bile or urine.

The following chart outlines the nutrients required by each phase to function at optimum levels as well as some supporting nutrients to assist the process.

Phase 1	Phase 2
Vitamin B2, B3, B6 and B12	Vitamin B5, B12
Folic Acid (L-5- Methyltetrahydrofolate better form – especially for MTHFR defect)	Folic Acid (L-5- Methyltetrahydrofolate better form – especially for MTHFR defect)
Glutathione	Magnesium
Citrus Bioflavonoids	Glutathione
Vitamin A	Methionine
Vitamin C	Vitamin C
Calcium	Choline
Vitamin D3	Taurine
Vitamin E	Cysteine
Milk Thistle	Calcium d-gluconate
N-acetyl Cysteine	Amino Acids:
Quercetin	L-Carnitine
	L-Glutamine
	L-Lysine
	Glycine
	Taurine
	Cruciferous vegetables (sulfur metabolites)
	MSM
	N-acetyl Cysteine

Liver Detoxification Process

Toxins (Fat Soluble)



Phase 1 Detox Pathway



Phase 2 Detox Pathway



Waste Products
(Water Soluble)

→ **Eliminated from the body via:**

Gall Bladder

Kidneys

Bile

Urine

Intestines

Digestive Toxin Elimination

The Digestive system is equipped to detox fat soluble toxins from the body if functioning properly. During the fat digestive process, bile is released from the liver. This bile can also contain the conjugated toxins from the Phase 2 liver process.

In order for the liver to function properly and produce enough bile, adequate protein is essential. Amino acids are critical for phase 1 and 2 liver detoxification. L-Taurine is essential for bile formation. Cysteine is the precursor to the antioxidant Glutathione. Glutathione cleans up free radicals and toxins that end up in the bile that is excreted to the intestines. Hydration is critical during this process because 85% of the bile is made of water. The nutrient Betaine (trimethylglycine) is a powerful liver detoxifier. Betain can be found in the highest concentrations in beets and beet greens.

The bile that is excreted during digestion breaks up the fat into tiny pieces. These pieces then enter the intestinal tract where villi on the wall of the intestines (sweeping back and forth) pick up the particles with the toxins and pull them off the wall and through the intestinal lining into the gut associated lymphatic tissue. These villi also pull off good fats as well (nutrients). If the bile is not adequate from the liver then these fat soluble toxins will not be broken down adequately.

Gut associated lymphatic tissue on the outside of the intestinal tract is approximately ¼ inch in size. Fat soluble chemicals are pulled through the villi into this tissue and attacked by the white blood cells of the lymphatic system where they are processed by over 500 lymph nodes and neutralized for the body to detoxify and carry them out.

If you have a sluggish lymphatic system or congestion issues it will be presented in things like allergies, belly fat, itchiness, fatigue, headaches, cellulite, and breast swelling and tenderness.

The integrity of the villi is important. If you have chronic stress, constipation, or irritation of the bowel a reactive mucous may form which cause the villi to stick to the wall of the intestines thus inhibiting it from absorbing not only the toxins but also the fat soluble nutrition.

When the malabsorption occurs, then toxins will move on to the large intestines. The bile will hook up to the chemicals and pull them back into the liver. 90% of the bile gets reabsorbed into the liver. The liver becomes overwhelmed and congested. The bile then becomes thick and doesn't flow as well. Which means that you won't have enough bile to detoxify the fats that come through the next time.

If the liver becomes too congested, it will send the fats back out into the blood stream. The blood stream will look for fatty tissues to store them in and they will go into the fat cells. (Pathway: Liver to Blood to Fat Cells) The most common fat cells that they find are in our brain. As we age and become more toxic we lose memory, cognitive function and clarity. This is due to toxic fat soluble build up in the brain.

The key to detoxification is to optimize digestion.

Fat soluble toxins – heavy metals, parasites, pesticides, bad bacteria and other cancer causing chemicals.

Indicators of an issue –

1. Blood sugar imbalance
2. GERD / acid reflux
3. Allergies
4. Skin issues
5. Hormone imbalance
6. Mucous in stools
7. Constipation
8. Loose stools
9. Belly fat storage
10. Feeling nauseated after a meal (especially high in fat)

FIBER - Another issue with “re-poisoning” of the body is low fiber diets. If we don’t eat enough soluble fiber, our bile is repeatedly circulated instead of being ushered out of the body (toxins and all). Over time it becomes very concentrated with toxins which can lead to inflammation, gall bladder disease, intestinal inflammation, skin issues – like acne, eczema and psoriasis. Remember that the inflammation of the intestines creases the mucosa that causes the villi to get stuck to the wall and not absorb the fats into the outer layer for detoxification. This also makes you nutrient deficient due to malabsorption.

Cellular toxicity

The cellular wall is made of lipids and proteins. Because of this lipid soluble compounds are able to pass freely into it gaining free access to the cellular interior. This is where it becomes much more difficult to remove the toxins. It is best to keep the toxins moving out (as described above) than to allow them to be stored because of a congested detoxification system.

Blood acidity is one of the biggest hindrances to detoxifying the cells. Acidity can come from the foods we eat, beverages we drink as well as low levels of oxygen content. We need to keep our body in an alkaline state to assist with detoxification.

Some strategies to alkalize the body:

1. Start your morning with clean filtered water with lemon juice. Drink ½ your weight in ounces throughout the day (150 lb person would drink 75 oz)
2. Eat foods rich in alkalizing minerals
3. Consume unrefined salt rich in minerals
4. Snack on raw almonds. These are rich in magnesium and calcium which helps to maintain alkalinity in the body.
5. Eat less red meat. This can have an acidic effect on the body
6. Increase the number of vegetables in your diet.
7. Take deep breaths. Many people take shallow breaths. Concentrate on filling your lungs with oxygen several times to increase oxygen in the blood stream.
8. Exercise – This is one of the best ways to increase oxygen, get the lymphatic system moving and increase toxin elimination.

24. Importance of Healthy Gut Flora

Another culprit in the detoxification arena is the importance of healthy gut flora. The gastrointestinal tract is approximately 25 feet long. Within this intestinal tract are friendly bacteria and not so friendly bacteria. When the unfriendly bacteria become the dominant force, trouble occurs. This is called gut dysbiosis.

The gut has three primary functions:

- Digestion of foods & conversion to vitamins
- Absorption of nutrients
- Prevention of pathogens and toxins from entering the body

There are approximately 500 species of bacteria along with yeast and other organisms in the gastrointestinal tract. These items are what make up the gut flora. The friendly bacteria are vital for proper digestion and for maintaining the overall health of the intestines. Most of these bacterial have names that begin with “Lactobacillus” or “Bifidobacteria”. These are the classes of bacteria that they belong to.

Disruption of the balance of the organisms in the intestinal tract can lead to an overgrowth of the bad forms of bacteria. Several factors can be indicated in this degradation.

- Use of hormones such as immunosuppressants (like steroids)
- Alcohol
- Stress
- Antibiotic usage (abuse of)
- Diet high in sugar and refined carbohydrates.

The dysbiosis of the gut can often be seen in medical conditions such as acne, food allergies, depression, and chronic fatigue. A beneficial balance of the good bacteria can be restored through supplementation of prebiotics and probiotics. If left untreated, the dysbiosis will result in leaky gut syndrome which causes the lining of the bowel to increase permeability of the intestines allowing toxins to pass through to the blood stream.

Healthy gut bacteria has an important role. It is responsible for synthesizing all the B Vitamins along with Vitamin K and amino acids. These bacteria also “grab” toxic chemicals, heavy metals, and carcinogenic environmental toxins. It either holds on to the toxins and is eliminated through the colon or neutralizes it. It stops the toxins from passing back into the blood stream.

25. Detox Strategies

Saunas - Infrared Saunas can be a beneficial tool to the detoxification process. Since the skin is the largest detoxification organ it is a great way to remove them. This also improves circulation, increases oxygenation and helps to eliminate congestion.

Dry Brushing – This can help to boost circulation and stimulate the lymphatic system to release toxins. It also helps to remove dead skin that can clog pores where toxins can be released.

Using a natural brush, gently brush in a circular movement towards the heart. Start at the soles of your feet working up your legs and then move to your hands and arms. Brush your back from your buttocks up and around to the stomach. Brush the stomach area with a counter clockwise motion.

Detox Baths – Detox baths can be beneficial especially when dealing with skin breakouts. Add the following items to very warm water and soak for 20 mins. Double the recipe for a large tub. These baths can be taken several times a week.

1 Cup Epsom Salts or Dead Sea Salt

1 Cup Hydrogen Peroxide

½ Cup Baking Soda

28 Day Food Elimination and Detoxification – Metagenics offers a 28 day detox program that I used when fighting cancer. I completed one 28 day cycle before my last round of radioactive iodine and then again after I received my last treatment. It is not an easy task to perform but I will testify that it is worth it. I felt better than I had in years. My joint pain was relieved, brain fog lifted and I even lost weight. This protocol involves the usage of 3 canisters of the product and a strict dietary program. During this time you will eliminate foods that can be inflammatory or an allergen for many and then they are slowly added back after the program is complete. This allows you to adequately evaluate what may be causing issues with your body.

Milk Thistle – Studies have shown that milk thistle can help to protect and promote the growth of liver cells. It helps to fight oxidation which protects the cells from damage. In 16 trials by the NIH they also concluded that the supplement helped to protect the liver through antioxidant activity, enhanced protein synthesis, and toxic blockade at the membrane level that inhibits membrane peroxidation. Milk thistle helps to slow the depletion of glutathione which is important for the phase 2 detoxification process in the liver.

Dandelion Root Extract – The root of this plant can act as a mild laxative. It has also been known to improve digestion. Preliminary research suggest that dandelion may help to improve the function of the liver and gallbladder. In folk medicine it is used as a liver stimulant and tonic. The University of Maryland Medical Center has indicated that dandelion root may boost the production of beneficial bacteria in the intestines.

Yellow Dock – In traditional medicine yellow dock has been thought to be a blood purifier and detoxifier of the liver. Yellow dock stimulates bile production which aids in digestion. It is effective in preventing toxins from entering the gallbladder, bloodstream and liver.

Lymphomyosot – This is a homeopathic formula from HEEL that is used to support the lymphatic, immune and circulatory systems. The formula contains homeopathically prepared herbs that are intended to promote lymphatic health by reducing swelling from poor circulation and environmental toxins. Assists in normal detoxification. May support lymphatic function. May support circulation.

26. Final thoughts as it relates to Iodine Supplementing Detox.....

One of the blessings and a curse of iodine supplementing is that toxins are released in the body. It is a blessing because bromide, fluoride, mercury and lead are released from the cells so that the healing can begin. But the curse comes from the large amount of toxins being released which in most cases, cannot be eliminated quickly and effectively. The average person has no idea just how toxic they become. By the time illness sets in, the toxicity is more than likely very high. There are some who begin iodine supplementing and feel no detoxing effects while others have terrible side effects that are triggered by just a small amount of supplementing. Still more experience weight gain. I believe that the information in this document holds the key to this issue and offers options for dealing with it.

If you are going to embark on an iodine supplementing protocol it would be prudent to assess your current toxicity status. Do you have any of the symptoms that were listed previously that may indicate a congested detoxification system? If yes, then it may be best to undergo a detox program prior to beginning iodine. A few weeks of concentrated support with the purpose of increasing bile, cleaning up the diet and cleansing the body will offer a better start to your journey.

If you are experiencing detoxing while supplementing, the strategies listed previously can help to lessen the severity of the process. Intermittent supplementing (taking iodine a few days on with a few days off) is a strategy that I used when toxic and detoxing faster than my body could handle. During this time you continue to take the supporting nutrients outlined in the Guide to Supplementing while taking a break from iodine. The Salt Loading protocol can also help to move bromide out of the body more quickly and effectively so that it is not recirculated and stored in the body.

The saying “No pain no gain” is not something you want to strive for. The goal is to supplementing with enough iodine to release toxins while not releasing too quickly so that it stresses the body and overloads the detox pathways. A steady low level detox that is well supported will get you to your destination – abundant health.

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