Iodine Controversy: Should You Be Taking Iodine Or Not

Transcript

Hello and welcome, everyone. This is Dr. Ritamarie Loscalzo. What we're talking about today is the great iodine controversy. I would like you to leave here today knowing or feeling a good sense of whether you should be taking iodine or not or whether I should be getting tested for this important nutrient. The reason I chose this topic is because I'm constantly bombarded with questions about iodine. "Oh, I have Hashimoto's," or "Oh, I have this other autoimmune disease and I was told I should not take iodine. Iodine is bad," and blah, blah, blah. Then others say, "Take tons and tons of iodine."

I want to go through and share with you my research and give you ideas of how you will know personally for you whether iodine is a good idea or not. That's what it's really all about. That's why I'm here presenting all these information to you is not to slam my ideas down your throat, but to share with you practical information and strategies so that you can make your own very informed health decisions. I think it's really important that all of our decisions come from information and not fear.

Before we get, I just want to remind you that this presentation isn't intended to replace a one-on-one relationship with a qualified healthcare professional. It's certainly not medical advice. It's intended as me sharing information with you, information that I've gleaned from my own private practice, working with patients for over 22 years, from all the research that I do, from all the conferences I attend, and from experience just in my own life. If you're working with a doctor, make sure that anything that I talk to you about today that you run that by your practitioner and make sure that's in the best interest of you and your health goals. With that out of the way, let's begin.

Let's start with what the heck is iodine? What is it? We know that it's a mineral. It's an essential element. It's something that we need to be alive, to survive. It is part of ... You'll see on the periodic table, which is why I put this little, cute picture. It's bright orange. You'll see it has the atomic number at the top and the atomic weight at the bottom. If this is smacking too much of chemistry from high school, just bear with me. It's just a little bit. It's an element. It's a mineral. A lot of the elements on our periodic table are essential to life: calcium, magnesium, boron, iodine. A lot of them are antagonistic to life. We're going to talk to you about a few of those today that actually antagonize iodine.

Iodine must be included in your diet, like the minerals do. Your body can't make iodine. It's part of a group called the halogen group on the periodic table. It's way over to the right. It's the second of third to the end. It's related to bromine, fluorine, chlorine. These are all iodine antagonists. What does that mean? We'll go through that in a little bit more detail. If you're exposed to bromine, fluorine, and chlorine in your environment and there's a lot of that exposure happening, that can antagonize the iodine because it can attach to the receptors in your body for iodine and be utilized instead of iodine and then have a toxic effect on your body rather than a supportive and protective effect.

Here we go. This is as detailed as ... It's not as detailed as I get. I have another slide a little further on where get a little detailed, too. This is the periodic table of the elements. If you studied high school not that long ago, it will maybe freshen your mind, if you are a chemist, if you have children in high school studying this. I see this all the time with my son who's taking chemistry. I actually have some cute, little take-offs at the periodic table. I have a periodic table of the nuts and periodic table of the vegetables. It's sitting on my wall in my kitchen. It's different. It's laid out in this way. It talks about those. It's really cute. I'm a geek when it comes to that stuff.

You'll see this column way at the side where iodine sits. It's the fourth one down on the second to the last column on the right-hand side. It says iodine. Above it is bromine, above it is chlorine, and above it is fluorine. If you recall anything from chemistry, as the elements go down the column, they increase in atomic weight. They're heavier, they're bigger. Iodine is the biggest of them all, which is why the bromine, chlorine, and fluorine have no problem getting in there and sneaking into the iodine receptors and wrecking havoc in your body. Let's talk about some of the reasons that we become iodine deficient.

There is a big controversy as to whether we should supplement with iodine, but the truth of the matter is that we don't get enough in our food because our soils are depleted. We have a lot of antagonists in our environment. In addition to the fluorine, bromine, and chlorine that I talked about, toxins will compete with iodine receptors and they can latch on to iodine receptors and displace them. Soils are depleted of iodine unless they're really close to the sea. The sea is abundant in iodine, but the land soil has become depleted. That's another reason our land vegetables, our land foods are very poor sources of dietary iodine, unless you live by the sea.

Iodine exposure to radioactivity affects iodine, like the fallouts, the nuclear fallout in Japan and other places where there've nuclear accidents and there's radioactive iodine in the environment. That, too, displaces the iodine on those receptors. In most places, the water is chlorinated and fluoridated.

The chlorine is put in there to kill bacteria, to kill off whatever bad stuff is living in there, so we don't have this junkie water coming in to our house, which can be a good thing because we don't want bacteria, but we also don't want to be drinking chlorine. It's a double-edged sword.

There's also fluoridated water. Somebody got the bright idea, probably a company that had excess fluoride from industrial waste, decided that, "Wow! Fluoride can protect your teeth and prevent cavities." They convinced everybody that we should be taking fluoride for that. Yeah, fluoride in small amounts, taken specifically for tooth decay, can be a helpful thing, but massively putting it into our water where there's no control over the amount that individuals would be consuming I think is really irresponsible. It's a very irresponsible decision on the part of our so-called protectorates in the government. Chlorinated and fluoridated, again, we bring those other halides in that displace iodine.

Baked goods. If you buy bread, there's usually a dough conditioner, and that's made with bromine. An interesting fact I found out last year when I was at a seminar where they're talking about iodine, historically and its uses and all, was that bread used to contain iodine as a dough conditioner. For whatever reason slipping my mind right now, they switched to bromine. The bromine antagonizes iodine.

There are a lack of iodine-rich foods in the diet just because the most predominant source in the diet would be sea vegetables. Unless you hang out with me and in my circles and in the circles that teach this stuff, the raw food circles, the macrobiotic circles, you don't hear a lot of people or see a lot of people eating a lot of seaweed, sea vegetables except when they go to the sushi restaurants.

The solution to the iodine dilemma was to iodize the salt. Again, just like fluoridating the water, it's just putting this substance that we supposedly need, which we do need, into the supply of salt, and there's no control over how much people are going to have. People eat a lot of salt or eat a lot of commercially-based crackers and cookies and chips and things and popcorn at the movies loaded with salt and iodized salt. You've no control. You could get into a situation where there's excessive iodine. In fact, this way of protecting everybody with iodized salt, it actually loses 100% of the iodine content after exposure to air for 4 weeks.

You put salt in the salt shaker. I don't know about you, but in our house, the salt shakers have little holes in them. That salt is exposed to air. We don't use iodized salt; we use pure, unrefined sea salt. That's the point, you lose it. People are just not getting it even though the government is trying to get it in there by creating this iodized salt thing and massively supplementing people. That's why we become iodine deficient.

I promise you I think this is almost the last look at chemistry. If this bugs you out, close your eyes for a few minutes, but I wanted to show you a picture of the halides. They all look really similar. These are pictures of fluorine, which is the smallest, and iodine, which is the largest. You can see that fluorine is very small. It has 9 protons and 10 neutrons. It has an atomic weight of 18.9984032. Remember that number. It's important. No. Seriously, no. We probably had to memorize those things at some point in our life, but, really, we're trying to get the gist of it, that these things can displace iodine on the receptors for iodine, the functional receptors.

We're going to look at it in a little bit where all those places are in the body that iodine is useful. If you read this from left across to right, wrap around, and then come back. Iodine is our central piece. That's the element that we need in our body. The other ones just get in the way.

Radioactive iodine is another thing. If you look back at iodine here, it has an atomic weight of 127 pretty much. If you look at radioactive, it has 131. It's been combined with radioactive material - uranium, pluton, whatever - and it's made to look differently, but here's the deal; the half life of this stuff is 8 days, which means that in 8 days, half of it is dissipated, but every exposure ... For example, you go in to get a test. Very commonly, there's scanning done on the thyroid, where you're injected with radioactive iodine so that it does displace the iodine. We know it displaces the iodine at the receptors because it's used clinically as an assessment tool. Somebody suspected that maybe they have a tumor or a cyst or cancer or something on their thyroid. They go in and they drink this iodine solution or it's injected.

This iodine solution which is radioactive displaces the iodine off of the thyroid and it makes you feel pretty sick for a while there, too, as a matter of fact. It displaces it so that when they do the scan, the thyroid lights up. They can see how much iodine and how big it is and what it looks like. It's very commonly done. The half life is 8 days. They say after somebody's had a test like this, this radioactivity can be transferred to other people, so they're not supposed to go around other people, not supposed to have sex, not supposed to kiss your children, and certainly not supposed to get pregnant. Anyway, that's just a little bit of the science behind it.

Here's a picture that I found of how far this travels. This was from the Fukushima event that happened a couple of years back. If you look right there where the explosion was, very red, very high, high, high concentration. Even then you get miles out and you're looking at huge, huge concentrations of radioactive iodine spreading out. Some even say that it crosses the ocean and that traces of the radioactivity are found in California and the West Coast. This is a serious problem. We have lots of exposures to things that disrupt iodine.

I want to take a look, in addition to what are the consequences of iodine deficiency, what's happening when we don't have enough iodine.

I also want to take a look at why it's so important and what of our good functions are being disrupted when we don't have enough iodine. Consequences of iodine deficiency, hypothyroidism, low functioning thyroid. Why? We'll look in a minute and see how each thyroid hormone, T3 and T4, are composed of iodine. T4 has 4 iodines. T3 has 3 iodines. Precursors to T4 and T3 are T2 and T1, which have 2 and 1.

If there's not enough iodine, your body just can't make thyroid hormones. People who say, "Oh, I have Hashimoto's. I can't do iodine." We'll talk about that in a bit why people say that. They'll say, "Oh, it's been a rumor that goes around that you shouldn't take iodine. You should make sure you have iodine." Yeah, excess iodine has been shown to flare up Hashimoto's. Totally true. Excess is the key word here. The likelihood of you having excess iodine, unless you've been supplementing heavily for a long time, are pretty slim. I think it's really wise that we test, especially in people who have Hashimoto's. I will never supplement somebody with iodine if they have Hashimoto's because I want to make sure. I have not found any yet that were not deficient. They're all deficient.

The next thing on my list is goiter. If you're looking at the screen and you see this picture, it looks really grotesque. This is a person's thyroid. The thyroid sits in your neck, right in the middle. Excess iodine, there's a lot of other causes of goiter, but the main one is iodine deficiency. There could be iodine excess, but it's really rare. Look what happens. This isn't the common presentation, but I wanted to show you the extreme. Oftentimes you just look at somebody's next and just see the swelling in the middle of their neck. That's something that needs to get checked out.

The other piece, though, you see how that thyroid ... This woman's thyroid, it looks all bumpy. The other place that can get bumpy as a result of a deficiency of iodine is your breasts, not just in women either, but especially in women because we have a lot of lymphatic tissue in our breast. Those lymphatics get congested as a result of iodine deficiency. If you've got these painful, little, lumpy bumpies on your breast, it's worthwhile for you to get tested to make sure that you don't have an iodine deficiency. It causes proliferation of tissues, so it can cause uterine fibroids. When I say proliferation of tissue, I mean overgrowth of fibrous tissue, so fibrocystic breasts, uterine fibroids.

There were people who get really good results with iodine supplementation, not just taking it internally to get it systemically, which is important, but also applying it right there to the breast tissue to reduce fibrocystic breasts. Very effective therapy. The other thing that can be done for uterine fibroids, it's applying the iodine vaginally and painting it up on the cervix, so it gets up there into the uterus where it's needed the most. Phenomenal results.

The other things that it can cause are mental retardation and breast cancer. One of the reasons that it causes breast cancer is because it affects the conversion between the types of estrogen. Without getting too far astray into the wonderful world of hormones, I will share with you that estrogen is not just a single hormone as a lot of people think. "Oh, I have estrogen or progesterone or testosterone." Estrogen is a family of hormones. The 3 main ones are coined E1, E2, E3, estradiol, estrone, and estriol. Estrogen gets a bad rep in that, "Oh, excess estrogen causes breast cancer. We have to be careful of it." Indeed, we do have to be careful about out-of-balance estrogen. It's found in plastic mimic or estrogen in plastics and all these things that can cause problems, but there's certain types of estrogens that are proliferative, meaning they cause growth, and there is others that suppress it.

The cancer-suppressing type of estrogen is E3, which is estriol. Now estriol is made by the conversion from the other 2. The only way that you can properly convert is in the presence of iodine. Iodine helps that conversion to happen. When I look at 24-hour urine tests for people's steroid hormones to see what's going on there, I'll be looking at the ratios between estriol and estradiol and estrone. If that ratio is too low, iodine is my top nutrient of choice. You can reverse and get those numbers back into balance within several months of appropriate iodine supplementation. It doesn't mean going out and getting a multivitamin with 150 micrograms of iodine, which is considered to be RDA. A lot of doctors are saying, "No way. That's way too low to even support your thyroid let alone all the other things that have to happen."

The breast cancer is a common occurrence when those estrogens get out of balance. We can look at the various ratios and say, "Whoops! This person has an iodine deficiency." The best way ... We'll talk about some good testing for it in a little bit. In the meantime, let's talk about a little bit more about the symptoms of iodine deficiency.

Goiter, we talked about already. Fatigue. This is true as a result of it affecting your thyroid gland. Increased levels of TSH, which is a thyroid hormone. Intolerance to cold, cold hands and feet, foggy thinking, increased need for sleep. Sleeping does not necessarily take away the tiredness. You're still sleepy. It could be an iodine deficiency. Dry skin, thinning hair, and constipation. These can all be symptoms of iodine deficiency. These can also be symptoms of thyroid imbalance.

Now just because you have hypothyroidism doesn't mean that low iodine is the cause. It might be the cause. It might be a contributing factor, aligned with other causes, but it might be not the cause at all. There's a lot of things that cause thyroid problems. For years, people just thought, "I've got low level of thyroid. I've got to take iodine," but in fact that's not the only solution. What else? Let's look at some other things.

Let's look at the symptoms of iodine deficiency that are related to the lymphatic congestion that occurs when you're low on iodine. You can get skin irritation. You can get sore joints.

You can get aching in your hands and feet that mimics arthritis. The cold hands and feet related to thyroid or not, related to lymphatic congestion. Swollen and sore breasts, fibrocystic breasts, even breast cancer, swollen belly, cellulite under the skin, sore throat, allergies, headaches, chronic colds, cysts of any kind, and accumulations of fibrous or scar tissue. These can all be related to the iodine deficiency causing lymphatic congestion.

It doesn't mean that if you have any of these symptoms that you are necessarily deficient in iodine, but it certainly says that you should rule it out. I wouldn't recommend just going out and supplementing huge amounts of iodine without first testing. You could get into trouble, especially if you have an autoimmune disease. Small amounts or conservative amounts could be good, but it may not be solving the problem. It's like when I talk to people about vitamin D. Most likely you're not going to get harmed by taking 5,000 IUs of vitamin D a day. The harm can come if the 5,000 isn't enough and you're continuing to suffer with vitamin D deficiency because you're only taking 5,000 and maybe you need more. You may have some other metabolic things going on, genetic things going on.

The same is true for iodine. If you decide, "I think I'm low on iodine. Let me just supplement," and you go and you take a 400, 500-microgram dose, that may be barely touching the surface. Then you're thinking, "Iodine mustn't be the problem. I must have to look elsewhere," when indeed iodine can be the problem, you're just not taking enough.

What are some of the benefits of iodine? What are some of the things that iodine gives us in our body? It supports your immune system. It protects you from infection. Iodine used to be used very, very commonly as an antiseptic on the skin, and it still is. You put it right on the skin to as antibacterial, much better than taking those artificial, synthetic antimicrobial things that they put on. This is one way that it was used.

It was also used to be used for water. When I was camping in years ago, before we had those little portable filters we could take, we would take little iodine tablets. If you had to drink out of the stream then you would put the water in your container and you'd put this little iodine tablet in. It tasted awful, but it protected you from whatever critters and [GRD 22:34], whatever else might have been going on there. It's a very strong antimicrobial, very much supportive of the immune system.

It also supports natural detoxification. That is a double-edged sword, because you'll see that when people get on high doses of iodine, they may not feel good and they think it's because they have an iodine allergy or an intolerance when indeed that's not the issue. The issue is that iodine supports detoxification. When you go in and you supplement with iodine, anything that's been ... Any toxins or halides like bromine or chlorine or fluorine that have attached to themselves, to the iodine receptors, are being displaced now by the iodine.

Then they go back into circulation and you may have some detox reactions. I'll talk to you in a little bit about how you can avoid some of that.

Of course, it supports thyroid function. Thyroid hormone is made with iodine, 3 of them or 4, depending on whether you're looking at T3 or T4. If you need more background on thyroid, what's T4, what's T3, what's TSH, what does that mean, go back in the library. The library has a thyroid presentation which gives you more details.

It supports optimal hormone function. Like I just talked about with the estrogens and making sure that you have enough of the protective estrogen, which is called estriol. It supports memory, energy, mood, and weight. That's directly through the effect on thyroid, but also as a result of the effect on these other systems. Finally, it supports breast tissue. It keeps the breast tissue nice and healthy.

Lots of information. I've got some references for you if you want to dig deeper into how all these works and what some of the researches to support iodine and the use in the breast cancer and fibrocystic breasts. I'm not saying that if you have breast cancer, you should skip what the doctor says and just get some iodine. You need to be working with a practitioner who knows what they're doing and knows about the nutritional side of it as well as the conventional side of it and what your risks are and how bad things are.

This is a picture of the interrelationship with iodine and thyroid. Over on the far left, you'll see a molecule which is an amino acid called tyrosine. The second picture is thyroxine, which is also called T4. It's most commonly called T4, but it's also called thyroxine. If you look, you'll see 2 of those are ... Yeah, you'll see almost like 2 of those tyrosines put together. You've got the tyrosine at the bottom and you've got 2 iodines attached to it. Then you have the top part of the tyrosine at the top. There's 4 iodines attached to tyrosine plus a few others stuck along with it.

The triiodothyronine, which is T3 ... If ever you're on a lab test, people always ask me, "I can't find the T3 on my lab test. What's this thing called triiodothyronine?" That's T3, just so you know. That has 3 iodines. See, there's missing one over there. There's missing the top left one. See, there's only 3.

Now there's something called reverse T3. On average, about 20%, maybe between 10% and 20%, of your T3 instead of getting your T4 ... It gets converted to reverse T3 instead of T3. In your body, your thyroid produces mostly T4, and that gets converted to T3, which is the active form. About, on average, 20% of that gets converted to reverse T3. If the reverse T3 builds up, it's not going to be active. If you have too much reverse T3 in relationship to T3, it's a problem.

You could see the main difference between T3 and reverse T3 is just it's flipped the missing iodine compared to T4 is up on the upper left on the reverse T3. It's on the lower left on the T3. That's basically how iodine fits in.

I promise you this is the last biochemistry thing. I wanted you to see where iodine fits in here. You basically have your food sources of iodine. The iodine is taken from their ... Amino acids are taken from proteins - meat, fish, poultry, eggs, milk, nuts, seeds, greens, legumes. I didn't make this chart, I just found it, so it's missing a few things in my opinion. In the digestive system, the protein gets broken down to amino acids. The iodine gets pulled out of those veggies and the foods. Then the iodine gets converted to iodide and then mixes with the tyrosine plus some oxygen and it makes these single and double, like T1 and T2. Then those get converted to T3 and T4. You don't need to really focus on this or understand this. I just wanted to give you a sense of the progression and why it's so important to have iodine.

By now you're thinking, "This stuff seems pretty good. I think it's a good nutrient to have. It's not a good nutrient to be deficient in. How do I know? How do I know if I'm iodine deficient?" There are some symptoms. We already talked about that. We talked about the low temperature and the cold hands and feet and the lumpy breasts and the fibroids. There's all sorts of things that can clue you in to, "Oh, I'm iodine deficient." After we take a look at the slides, print them out, take the slide that has all the symptoms, and look to see, "Hmm. I have a lot of these. I might be iodine deficient."

Another thing you could do is take your first morning temperature and compare it to your daytime temperature. The first morning temperature is what's called the basal body temperature. If it's low, it suggests you might have a thyroid problem, which could suggest that you're iodine deficient. It doesn't mean that you necessarily are.

The other way is thyroid labs. The second and the third one are related to its effect on the thyroids. You get a bunch of thyroid labs, you see that there's a problem. You still don't know if it's an iodine problem. What you want to do if you want to find out if there is a problem with iodine is to do some testing. The one I most commonly use is called the 24-hour urinary iodine load test. I have a slide that will take you through exactly how that process is done.

I want to take a few minutes to talk about something called the iodine spot test. A lot of people ask me about this. In fact, this is something I used to use a lot. The jury's out as to how effective it is. It's certainly not as effective as the 24-hour urine test and it's not quantitative, it's more qualitative. You're looking at and going, "I think that it's fading."

Basically, you paint a square, a one-inch square of iodine, liquid iodine, onto your skin. Then you watch it and you see how long it takes for it to disappear. If it lasts for 24 hours or longer, you are unlikely to have an iodine deficiency.

If it lasts for 3 hours or less, you are very likely to have an iodine deficiency. In between, it's hit or miss. There are a lot of things that can interfere. It could be that you got wet. It could be that there's more of an evaporation that happens. The liquid iodine evaporates into the air. It's not considered the gold standard or very accurate, but it can be used just as a starting point for guessing if you have iodine problems.

Let's talk more about how to do an iodine load test and then I'll give you resource for where you can find it. The first thing you want to do is stop taking any iodine or iodide-containing foods for about 24 to 48 hours before you do the test. The day you're going to do the test, make sure you read the instructions carefully in advance so you know what you're doing. It's a shame when you're doing a test and you get halfway through it and realize you didn't read the instructions and then you just ruined the kit.

First thing you do is you get up in the morning and you discard your first morning urine. You just let it go. Then you take 4 tablets of a supplement called Iodoral. Iodoral is a combination of iodine and iodide. Each tablet has about 12-1/2 milligrams total of iodine between iodide and iodine. If you take 4 of them then basically you're getting 50 milligrams of iodine. You take those 4 tablets and then you start collecting your urine. You follow the directions, whatever the lab says about how often and how much, but you continue to take it, collect it, all the way through to the next first morning urine.

People ask me, "What happens if I get up during the night?" That's right. You're going to pee into that thing for a full 24 hours. You discard your first morning urine on, say, Wednesday and you test from the second morning urine all the way to the first morning urine on Thursday. Don't plan to do this on the day you have to get up at 3am to go catch a flight. Make it beyond a normal day for you because, otherwise, you may not get enough of the full 24 hours of urine.

If the urine is over 3 liters, the lab will instruct you what to do. It may be that it's going to dilute, they'll have you look at the color. They may have you do it over again, but follow the instructions with the kit. There are a number of labs that do these and you've got them on your slide. You've got Doctor's Data. There's one called FFP. Doctor's Data will only work through a provider. We have Doctor's Data up on our side at the doctorritamarie.com/labtesting page. We can order it for you.

Quite frankly, I think you're better off going to Hakala because they're a little bit cheaper and they're very good at answering questions. Everybody that I've sent there has gone and talked to people and they give you lots of information. They'll help you with the test. Then when the results get back, they'll give you a little bit of help with what it means. The Labrix, I haven't used yet, but I did meet the medical director of Labrix, Dr. Mead, at a recent conference. Very, very knowledgeable. I may try their lab out as well to see how theirs goes, too.

You get your test back. What happens if you find out that you are iodine deficient? There's a number of protocols that you can use. We're going to talk about protocols for correcting it supplementary and when you can use food.

First of all, let's talk about how you know with the iodine load test if there's a problem? You've taken a 50-milligram load of iodine. It's a huge dose of iodine. If you've taken that dose and when the results come back, you're going to get a pre and a post number. Actually, the instructions that I wrote there are if you're only getting the one 24-hour.

Let me just step back here. There's 2 ways you can do the iodine load test. One is you can get the pre-load number and then you can compare it to the post-load number. That's what I like to do. Some people just do the 24 hours and then compare it to norms. I'd much rather compare you on iodine and not on iodine. With a huge load like that, the expectation is that you are going to excrete at least 90% of it into your urine. If you've excreted less than 90% into your urine then you probably have an iodine deficiency.

The degree to which you are away from that 90% supports the degree of your iodine deficiency. If you've got 86%, you probably could use to take a little extra iodine, probably a little bit of food source is going to be helpful if you're not already on food source. If you are already on food source then a little supplementary. If your number is 50, it says you have a huge iodine deficiency.

In some cases, you may not be discarding the first morning urine. The way that I prefer you to do it is you're not going to discard the first morning urine. You're going to collect the first morning urine and they're going to give you a separate vial to put it in so you could get the pre and the post.

The other option you have when you run the iodine load test is to also test the halides, the bromine, fluorine, chlorine. Different labs offer 2 of the 3 or all 3, depending on which lab you use. It will add to the cost if you do this, but it's a good thing to know because if you have a large dose of bromine then we're going to know that, number one, you've got to get rid of that bromine. That bromine is attached to the iodine receptors, because here's what happened: this bromine is in your system attached to the iodine receptors. Then you came with a massive load of iodine. It displaces the bromine and you're going to see extra bromine excreted in your urine, especially if the bromine is higher on the second test than it was on the first test. Sometimes it's just high in general, which says that there's a pretty toxic load of bromine going on.

If you end up doing the halides and you see that one of the other halides is competing then you're going to have to do a detoxification to help get rid of it and use bigger doses of iodine to help displace it. You could end up having some detox symptoms, so I'm going to share with you some of the protocols and tell you where you can go to get more.

Assuming that you have had the iodine load test and it shows that you're deficient, you're going to be taking some amount. Mostly you'd check in with a practitioner on this, you could check in with the lab on this. Usually I recommend, if the person has a history of breast cancer or fibrocystic breasts or currently has breast cancer that they consider the 50-milligram dose. That can be Iodoral, which is a tablet, or it could be Lugol's, which is a liquid.

Some people get digestive upset when they take Lugol's, the liquid, so they take it in the tablet form. Some people just don't like to take tablets because they have excipients and other things in them, but it also does protect your stomach from getting aggravated. You'll have to determine what the best way for you to do it. I know a lot of people who do the Lugol's solution and they do just fine.

You're going to take that dose of iodine. What's recommended is that you start with small doses and then you can increase them. If you have some bromine or fluorine or chlorine bound to receptors or if you're toxic, what might happen as you increase your dose of iodine, you're going to see some symptoms.

Here's what happens on the day of the test for some people: they take the test and they say, "Wow! I felt great the day of the test. I had energy. I had mental clarity. My hands weren't cold. What does that mean?" I'll say, "We'll find out when the test results get back, but most likely that means that you are iodine deficient and your body was just loving having that extra iodine to put to work." That's a clue. If you do the iodine load test and you feel pretty awesome, it's a clue. If you don't feel awesome, it's not necessarily going to say that you don't need it. You'll have to wait for the results for that.

You can also feel awful. Why? If you've got a lot of other toxins bound to your iodine receptors and you go in there with 50 milligrams and you displace them, those toxins can enter the circulation. If you have impaired detox pathways, baby, watch out because you may have a headache, you may feel nauseous, you may have aches or pains, you may have digestive issues. Whatever it might be, it's likely a detox reaction.

In order to best utilize ... This is a protocol that was put together, the 2007 Iodine Conference. There's a site. I have it at the end, I have the site where you can go to, where you can find this protocol and everything you want to know. If you want to really dig deep into iodine, lots of research out there.

Along with the iodine, it's important to take some vitamin C, extra vitamin C, 3,000 milligrams a day, more if you've got a lot of bromide. You may need more to help you detox the bromide. Another thing that's recommended is 300 to 600 milligrams of magnesium, they found that in the form of oxide, glycinate, or citrate. I personally use glycinate or citrate over oxide, but any of them work. If you're in the B4 Be Gone Program, you're probably already taking that much magnesium and that much vitamin C. 200 micrograms of selenium. Selenium is important for supporting iodine. It's also important for converting your thyroid hormones, your T4, which is the inactive form, to T3.

The other one that's been found to be helpful in this protocol is 500 milligrams of niacin, that's vitamin B3, twice a day. Now the problem with 500 milligrams of niacin is the flush response. I don't know how successful people are with doing this piece, but I took a 500-milligram dose of regular niacin, not a niacinamide, and I was like I was out in the sun. I was itchy, I was burning. It doesn't last long. That's a common response because the niacin is a vasodilator. That's what this protocol includes, and I'm just sharing you this protocol. I haven't actually done this protocol with anyone. I just discovered this protocol recently, so I'm sharing this from more of an academic standpoint. I have done the vitamin C, the magnesium, selenium, and iodine. Those I have done together. I've done the B2, thiamine, but not in that dose. Then, of course, a B-complex and all the other kinds of things can be helpful as well.

If you get a bromine detox, you're having really bad detox reactions, first of all, the recommendation is to slow it down and go really slowly with increasing the iodine. On the other hand, there are ways to detox the bromine. I'll talk about that in a second, but I want to make sure you're aware where your bromide exposure might be. You may be thinking, "I drink pure water and I eat organic foods and I'm really careful," but you can still be getting exposure to bromide because it's in the environment. Flame retardants, fire retardants, pajamas, mattresses, carpeting, electronics, furniture, car interiors, they're treated with PBDEs, which are fire retardants, and those contain bromine.

Dough conditioners. Hopefully, you're not eating bread. If you are eating bread, you're making your own and you're making it in ways that don't contain gluten and all the other things. People who eat bread, bromine in the dough conditioner. Hot tubs and swimming pools. Some commercial hot tubs and swimming pools and private ones, too, have gone with bromine over chlorine. 6 to 1, half a dozen or the other, bromine is toxic, too. Pesticides that are in plastics, even those that are used to make computers. It's not that you have to be eating these things or touching these things. There are bromide dust that can come off these things.

Any baked goods and flours, even if they're not breads. You might check those and make sure that they don't have something called potassium bromide. That may sound at first blush to be something good for you, "Oh, potassium. That's needed."

Soft drinks are another place and medications. This site that I'm going to give you a reference to has the list of all the medications and all the different kinds of soft drinks. Hopefully, you're not drinking soft drinks and, hopefully, you're not on anything, but very necessary medications, but things like antacids and a lot of the over-the-counter medications have bromide in them.

If you start to take iodine and you start to get any of the symptoms on this slide, slide 20, it could be a sign that you're detoxing bromide. There's some really weird kinds of symptoms: eyelid and foot twitching, tingling in your hands or feet, dark and depressive thoughts, anxiety, sores on your mouth or tongue, acne, hair loss, brain fog. A lot of people have brain fog. Leg and hip ache, rash, metallic taste. This could also be always be due to the bromine ... Not always, but it can be due to bromide in your system, bromine, bromide in your system. Metallic taste in your mouth, sinus ache, cherry angiomas - those little raised bumps on your skin that look like moles, but they're red - a runny nose, headache, lethargy, difficulty swallowing, body odor, unusual urine odor, dry mouth, frequent urination, diarrhea, constipation, vision changes, irritability, increased salivation, changes in your dreams - like really wild and vivid dreams - changes in your hormones, kidney pain, and breast tenderness.

All of these can be a sign of bromide symptoms. You also see those when you start to increase your iodine input. There's a really good book that I recommend called The Iodine Crisis that lays a lot of this out and this website that I'm going to give you the link to in just a bit, so you understand what might be going on. If you're having some of these symptoms already, it may be related to bromide and exposure. I'll be looking to see where that might be.

What are some of the detox strategies to get rid of the symptoms and get rid of the bromide quickly? Salt loading. I shared that protocol. That's, again, on that website. It was related to the conference, the Iodine Conference, back in 2007. If you stop the iodine for 48 hours, it rests your kidneys. That can catch up and get rid of the bromide. You can reduce the iodine dose temporarily and then work back up. That's a really common thing to do and a very effective thing to do. You can take several grams of vitamin C throughout the day and the iodine companion nutrients. That's the purpose of a lot of the iodine companion nutrients is increase the excretion of the bromine so that it's not circulating around.

We do not want the bromine to stay in our bodies. We do need to eliminate it. What we're talking here is when the elimination creates a set of symptoms. Drinking more water has been shown to be helpful as well as 25 milligrams of zinc has been shown to be helpful.

Here's the salt loading protocol for possible bromide side effects. You basically take a quarter teaspoon of salt dissolved in half a cup of warm water and you drink it. Then you follow it immediately with 12 to 16 ounces of water. You repeat in 30 to 45 minutes, if you need to.

Say you're getting some of these bromine symptoms, you get a headache, you're ache, you look at that thing, the metallic taste, you're taking iodine, "Oh, this might be it," you can do the salt flush. You may repeat. You want to keep doing it until you're urinating like crazy. This is going to stimulate you to pee more so that you can get this bromine out of your system.

This is just a note that I found that this project called The Iodine Investigation Project, those participants found that they had better results when they use half a teaspoon of salt instead of a quarter teaspoon.

Now let's talk about food. There's a big controversy over whether we can get enough iodine in food, even if we are really, really careful. Let's address that. If you look at some of these sites in The Iodine Crisis and even David Brownstein stuff, they're talking, "There's not enough. You can't really rely on the food." Indeed, if you have a severe iodine deficiency, I would be looking at iodine supplementation, for sure. If you have a mild deficiency or once you're deficiency has been resolved and you're looking for maintenance, you want to look at what are the foods. How do I eat? Because we don't want to be relying on supplements for our whole lives. We'd like to be able to get as much as we can from food.

Top of the list is going to be sea vegetables, the highest concentration. I have a chart in just a bit where you can see how much is in which of the sea vegetables. Sea foods, if you eat animal products, the sea foods that are highest in iodine are cods, sea bass, haddock, perch, shrimp, and tuna. I personally don't eat those things because I don't trust the sea. I don't trust the mercury, the contamination. I just don't trust it.

Potato with a peel, baked. That I thought was an interesting one, but I found it on several different lists, so it must be true. I am not a big fan of eating potato, if you have glycemic issues, if you have blood sugar issues, if you have extra weight around your middle. It's a high glycemic food, but it's there. It was one. Certainly I don't recommend cow's milk, but it does have a little bit of iodine. Now these other things have virtually no iodine, if they're not listed.

Milk has a little bit, but I don't recommend milk either for a whole lot of reasons - mucus-forming, acid-forming, cross-reacts with gluten, highly allergenic, casein clogs up your system. Lots of reasons not to drink milk. There is a whole presentation in the library, To Drink or Not To Drink Milk. Turkey and chicken, compared to other meats, have a little bit. We're progressively going down the scale. Beans have a little bit and egg has a little bit. By far, sea vegetables are going to be your best source.

How much iodine do we really need? According to the RDA, which we don't always think of in the most highest regard, that adults, men or women, need about 150 micrograms a day. Then pregnant or breastfeeding women need about 250 micrograms a day.

When we look at the amount that's in Iodoral, that's 12.5 milligrams, that's, what? 20 times the amount, 40 times the amount. 250, that's 4 ... Yeah, 48 times the amount that's the RDA for pregnant and lactating women.

I'd give you a few quotes from David Brownstein and a lot of the other iodine researchers on what they think about these RDA. David Brownstein says, "There's no way you can even support your thyroid gland on 150 micrograms let alone the abundance of other things, let alone to combat the effects of radioactive iodine in the environment and to combat the effects of bromine and chlorine and fluorine in the environment."

This is just to give you an idea of the amount. This was from the World's Healthiest Foods. They ranked the sources of iodine. A cup of yogurt had about 87 micrograms. Cow's milk from grass-fed cows had 28 micrograms. Eggs, 27 micrograms. Strawberries, 12.96. These are all in reasonable servings, about what people would eat. Maybe they'd eat 2 eggs and maybe they'd eat 2 cups of yogurt, but that's the amount. You'd have to eat a lot of these just to meet the RDA.

Here's what it looks like for sea vegetables. This is for per 7 grams, which is approximately a teaspoon, if you powdered up your sea vegetables. If you look at this ... This is in milligrams. I should have put it in micrograms. I'll say them in micrograms, but some of these got so big, I couldn't say them. You've got nori. It has .098 milligrams, which is 98 micrograms. It's on par with the top food over there on the chart of the land vegetables, the land foods. Dulse has 1.169 milligrams, which is 1,169 micrograms, which is over 4 times the RDA for pregnant women and lactating women. Kelp has 3,170 micrograms or 3.17 milligrams, which is way higher. This is in a teaspoon of kelp powder. Wakame, 910 micrograms or that much in terms of milligrams is 0.91. Arame, this is the biggest one, but there is a variety, depending on where the arame's been grown, what kind of waters, et cetera, but it ranges from 7,000 to 39,000 micrograms. Wee! Hijiki is very modest with 2.8. That's 2800 micrograms. That's 10 times the RDA for pregnant and lactating women.

You could see that sea vegetables are huge. A teaspoon, not that hard to get a teaspoon of sea vegetables a day, but even if you only did half a teaspoon. I usually put about half a teaspoon in a smoothie and then I might put half a teaspoon in an elixir. Then I might sprinkle it on ... I definitely sprinkle it on my veggies. I put it in pretty much everything so I'm getting a lot. Now let's look at the numbers compared to the therapeutic ranges that we've talked about. 50 milligrams, you'd have to eat the arame, but you could do it. You could get that by eating 14 grams of arame a day. Not bad, eh?

It's interesting how much there is in sea vegetables. You could overdose in sea vegetables if you're not deficient. This is where the whole thing with the Hashimoto's and things come in. People say, "I took too much iodine and I had a problem."

That's if you're just like overloading yourself with sea vegetables, sure, you can run into problems. I definitely recommend getting the testing done.

You could see that the sea vegetables are a good source. When I read a book just saying blanketly, "Oh, they're not a good source," without actually sharing the tables and the charts, that's not a good source because people don't eat them. If you eat them and you eat them abundantly ... If you have a very large deficiency and you've got a lot of bromine toxicity and you need to displace it, you might not be able to get enough in the sea vegetables to do that therapeutic regime. Certainly, if you have a very mild deficiency or you have a maintenance program that you're going on, sea vegetables are great. I highly recommend that everybody start to incorporate sea vegetables.

We have an awesome show. It was actually a demo just a few months ago on using sea vegetables. This month's is going to be, again, more about the sea vegetables because it's so, so important and it's something that people overlook. Fun stuff.

When we do iodine supplementation, let's compare that to the foods, to the sea vegetables. Lugol's, a 2% solution of Lugol's, which is the most common ... 2 to 4 is common. It will have 1 milligram of iodine, 1.5 milligram of iodide, and then total of 2.5 milligrams. When you take Lugol's, you might be taking 5 drops, 10 drops up to, let's just say, 40 drops, if you're doing the 50-gram dose, if you have the 2%. If you get the 10% solution, you have to take much less. A 10% solution, you only have to take 1 drop to get the 12.5 milligrams, which is the equivalent of an Iodoral. 4 drops would give you the 50, if you're doing, say, the iodine load test. That's the story.

Now with iodine, like most minerals, it requires good stomach acid to be absorbed. Very important that you have good stomach acid. Iodine is very difficult to absorb. It's really a good idea to be looking at your gut and looking at doing some bitter juices, dandelion juice, arugula juice, chewing on the bitters from your salads. The greens are super important because even though they don't have iodine in them, they're going to help improve your absorption of iodine.

Let me just give you a few tidbits. These are some things from some of the researchers, the major researchers in iodine. This was one from Dr. Donald Miller. He said women with goiters have been found to have a 3 times higher incidence of breast cancer. That puts that connection together. A high intake of iodine is associated with low incidence of breast cancer and low intake with a high incidence of breast cancer. If you want to protect those breasts of yours, iodine is key. Animal studies show that iodine prevents breast cancer, arguing for a causal association in these epidemiological findings. Epidemiological meaning there's not necessarily a causative, but there's so much evidence that Dr. Miller is saying there's some evidence for it being causative.

How much do you need? According to Dr. David Miller, iodine is needed in microgram amounts for the thyroid, milligram amounts for the breasts and other tissues and can be therapeutically used in gram amounts. Now I'm not advising anybody use gram amounts. That's huge, unless you're under the care of a doctor like this who's a researcher, who knows what they're doing. The milligram amounts, I definitely work with people on. David Brownstein says that after testing over 500 patients, found that 94.7 of the had deficient iodine, and that's with doing the iodine load test.

How much are we eating? According to Dr. Miller again, people in the US consume an average of 250 micrograms of iodine a day. People in Japan consume more than 12 milligrams a day. That's a 50-fold increase amount. Why? They eat more sea vegetables. They eat a lot of sea vegetables over there and seafood. He also said that when you compare between the countries, it's disturbing because also the incidence of breast cancer in the US is much higher. Japan, until recently, was the lowest and US was the highest. Look at the difference in the amount of iodine consumed.

This is what irks me a bit when I hear all the iodophobia, as it's been termed, the fear of iodine. There have been some studies that show that, yes, excess iodine can flare up Hashimoto's because it increases the thyroid peroxidase antibody, which is the subject of attack. If you get the immune system under control then you can have the best of both worlds. You can't stay away from iodine because you won't make enough thyroid hormone. Yeah, that won't give the antibodies anything to attack. On the other hand, you're going to be walking around with hypothyroidism and need medication. That would be just not a good thing to do. Don't be so fearful about it. Test it. Don't listen to the stuff that people say that if you have Hashimoto's do not take iodine. Don't carelessly take it either. Go ahead and get yourself tested and take the amount that's indicated.

One of the things I'm going to tell you guys, it's important to repeat testing. You can't just test once and say, "Okay. I'm going to go on iodine. I'm going to stay on this just for the rest of my life." That's very, very irresponsible. Repeat testing. You go on a protocol, you do it for 3 months, you test again. It may take 4 times of testing over the course of a year to optimize your dose, but it's worth it. You see all the issues that happen when you're low in iodine.

Here's 2 books. Iodine: Why You Need It, Why You Can't Live Without It is David Brownstein's book. A more recent book is The Iodine Crisis. The David Brownstein book is written by an MD, one of the top researchers in the area of iodine. Then one of people who discovered Dr. Brownstein and had her own really serious illnesses cleared up by supplementing with iodine wrote the book called The Iodine Crisis, which is geared more towards ... A practical manual geared towards the lay person. The book by Brownstein can definitely be useful for the lay person, but it's also he had a lot of clinical stuff geared for a practitioner.

Here are some of your references. There's a really good article, I thought, on this lifespa.com. Iodine Deficiency was a really good article. That's at the top of your list. Then there's a paper from Scientific Literature as it pertains to Gulf War illnesses. There's the paper by Dr. Guy Abraham on the interaction between vitamin C and iodine. There's the Abraham article, The Safeties of Iodine, is very popular amongst the functional medicine crowd. There's another paper on Iodine Hypothesis, which ties in together the selenium and iodine in the breast cancer model. Then, finally, Breast Cancer Choices' Iodine Investigation Project database breastcancerchoices.org. That's the very bottom one. If you look at that very bottom one on your list, breastcancerchoices.org, that will give you all kinds of great information about iodine.

That's the end of my formal presentation. We can take questions for about 15, 20 minutes, if anybody has any questions. Otherwise, just really digest this information. Read up on it if you're interested. If you have a history of breast cancer or a family history of breast cancer or have breast cancer, I certainly recommend that you do your due diligence. Go to the Breast Cancer Choice's website, take a look at the various papers that I've put out here. That iodine deficiency article by LifeSpa was really good. That's that. Thank you very much for your kind attention.