Summit Introduction and Guest Background

Welcome everyone to the Gut Health and Longevity Summit. I am so glad you’re here, and I want you to think for a second about anyone in your life who’s been told that thyroid labs are normal, but still do not feel like themselves.

So today’s conversation is for them. We built this summit because chronic illness so often starts and heals in places conventional care doesn’t always look at first.

Today we’re going somewhere. Our audience has been asking about what’s really happening inside autoimmune thyroid disease, and why treating a number on a lab report isn’t always the same as treating the person behind it.

My next guest has spent her career doing something most primary care doesn’t have time for, finding the root cause underneath a diagnosis, and not just managing a label.

Doctor Bojana is a double board certified in internal medicine and integrative medicine, and a fellow of the American College of Physicians and Certified Menopause Practitioner.

She’s also certified in functional medicine through the Institute of Functional Medicine, and serves as an adjunct faculty at the University of Arizona.

Andrew Wills Center for Integrative Medicine, where we are both colleagues from. She founded Bojana, M. D., an integrative practice treating Hashimoto’s, PCOS, IBS and Sibo, and cardio metabolic disease, serving patients across five states via telehealth and in person in New York.

She has shared her experience on the Today Show, MSNBC and Rachael Ray, and sits on the Forbes Health Advisory Board and advises organizations including the Environmental Working Group and Eat Real.

So Doctor Bojana, welcome so much. I’m so excited for our conversation today. Thank you so much for having me. It’s a pleasure to be here. All right. So let’s start with the first question.

Something a lot of our audience gets confused about. Hashimoto’s and hypothyroidism gets used interchangeably, but they’re not the same thing. Can you explain what actually is Hashimoto’s thyroiditis and how do you tell it apart from, say, garden variety hypothyroidism?

This is a great question and I agree with you. These terms are often used interchangeably, and it’s important to make a distinction between them, because a lot of this is going to kind of guide conversations regarding root cause regarding lab work and treatment.

So Hashimoto’s thyroiditis is a condition whereby our immune system attacks the thyroid gland. So it’s a type of autoimmune illness where our immune system recognizes our thyroid as foreign rather than self, and starts attacking the gland and slowly destroying it as the grand gets destroyed.

It loses its capacity to make thyroid hormone, and that can lead to hypothyroidism, which means under active thyroid gland, which then means necessitate thyroid hormone replacement therapy.

Now people can have Hashimoto’s thyroiditis for a very long time or indefinitely, without ever developing hypothyroidism, without their their thyroid gland ever becoming underactive.

And they may not require thyroid hormone replacement therapy. On the other hand, people can have Hashimoto’s and discover that they have Hashimoto’s once they start experiencing underactive thyroid symptoms.

And then they they find that based on labs, they're flyweight, is under active, and it's because they have Hashimoto's.

Hashimoto's vs Hypothyroidism

Now, Hashimoto's thyroiditis is the most common cause of hypothyroidism of underactive thyroid gland. And this is why these terms are often used interchangeably.

Because typically when a person is hypothyroid, it often comes from Hashimoto's, although it can be from other causes as well. The most obvious one probably being having your thyroid taken out because of cancer.

Because of graves disease, another condition that affects the thyroid gland or other causes. So it makes me think of something. So when I was in living in New York City, we, I was at NYU and every day we would have about, you know, anywhere from 8 to 10 patients in our fat clinic coming in because they had thyroid nodules or they had something abnormal on imaging on thyroid.

And their clinician really wanted to go. All right, what is going on here? And we take our little like needle and do our little French technique where, you know, literally sticking a needle in the thyroid and aspirates a number of cells out.

And from pathology perspective, Hashimoto's looks very distinct under the microscope compared to, say, a nodular goiter or any of the neoplastic diseases.

Right. So when I'm looking at it, that autoimmune part of it that you mentioned, where it's like the body is identifying this beautiful butterfly shaped gland that everyone has and going, this doesn't belong in your body.

Let's go attack it. What we see is this infiltration of lymphocytes. Right. So this infiltration of lymphocytes is a type of inflammatory cell that goes and invades the thyroid gland.

So when it invades what happens is that colloid which you're talking about, the colloid and the follicular cells, which is responsible for making our thyroid hormone gets pushed out because now it's the lymphocytes are in this organ.

And that's where we start seeing those blood abnormalities. So this one in itself takes time for it to happen right. So like you said you might not see abnormal thyroid levels.

The person might be feeling symptoms and whatnot. But the full picture might not be there because we have this gland that maybe only part of it has been infiltrated and not.

And I also think of this from the fact that the number of thyroid resections I've looked at under the microscope and, and you can clearly see the pattern, what happens to it?

It's almost like a nice, like, fluffy thyroid gland full of colloid that's making the thyroid hormone to one that's totally diseased by Hashimoto's, where it's kind of like this hard like shrunken gland because it's now just lymphocytes instead of the thyroid follicles.

So it's a very interesting process to see because I've been seeing it for decades. And I'm like, okay, but but we need people to understand that there's a lot more going on there.

So let's talk a little bit about this attack. Autoimmune attack on the thyroid tissue. So what is it that helps make this diagnosis for an individual.

So I think the point you made is very important because as a pathologist right. You see this very clearly when you see a biopsy of the thyroid gland. And similarly on imaging right on ultrasound we can see some changes that are very characteristic of that autoimmune attack.

But routinely we don't do biopsies. Right. There's no need to routinely do a biopsy. And we don't even do a routine ultrasounds unless there's some abnormality.

Again, on physical exam if there's some sort of asymmetry or goiter, as you said, or maybe a nodule. And so the diagnosis can oftentimes the delayed because let's say you go to your doctor and you have symptoms of underactive thyroid or hypothyroidism.

So what could those symptoms be. It could be fatigue. It could be weight gain or difficulty losing weight. It could be this overall like brain fog sluggishness kind of feeling.

People can have a greater tendency towards depression. They can feel more constipated. It can cause menstrual irregularities in women. Infertility. There could be a whole host of other symptoms too, like hair loss or dry skin.

I mean, the list just goes on, right? The heart rate might be slowed down. They're just overall not feeling well like there exercise tolerances down there.

They're just not well. It's hard to wake up in the morning. I've had hypothyroid patients just tell me like I just can't wake up in the morning. It's just so hard.

And so they might go to the doctor and have an by, again, standard of care, conventional medicine. We're taught to just check the age, which is roid stimulating hormone if the thyroid stimulating hormone is in the normal levels.

Unfortunately, the way that we are taught is stop there. Don't do anything else. Now the the challenging piece is, is that a lot of these symptoms that I just described about hypothyroidism.

Well guess what. If you're iron deficient or anemic or have other ailments, they can mimic those same symptoms. So of course it's up to the clinician to then determine when do we dig a little bit deeper in this direction, what other things do we need to rule out, and so on.

Are there other metabolic causes, other nutrient deficiencies or other things. Right. So part of that is clinician judgment. Really working with your doctor to determine where do we have to dig deeper.

But if for someone with this type of picture with these kinds of symptoms, we just order a sage and we stop, we're never going to find out if they have those findings that you just described so beautifully on pathology or on their ultrasound, or whether they have that autoimmune attack.

So what I typically do in my practice, and what I do when I teach clinicians is I say, well, we have to dig deeper. If you have a strong clinical suspicion that somebody might have this auto immune response against their thyroid, we have to dig deeper and we have to validate our patients, too.

And I just want to kind of emphasize this point, because I see a lot of patients in my practice who have not been validated by the medical system and who have gone from doctor to doctor and being told, you're fine, you know, what are you talking about?

Your labs are normal. And part of the issue is that maybe not all of the dots have been connected. Part of the issue is that we don't know everything in medicine, and so sometimes we don't find all the root causes.

And part of the issue could be that they just weren't actually looking for that specific thing. So in this kind of scenario, we have to look a little bit further.

So how do we do that. What other tests are available and what's applicable in this case. So usually when I see a patient where I'm suspecting hypothyroidism coming in with these symptoms, I'm going to look beyond that, that stimulating hormone.

And I'll talk a little bit more about what age is and all these tests. But to specifically evaluate for autoimmunity, we

do have two lab tests specifically that look at motos, which are thyroid peroxidase antibodies or TPO antibodies.

And we have thyroid globulin antibodies, TG antibodies. And so these are labs that can easily be ordered. This is part of blood work. And in upwards of 90% of the cases of Hashimoto's these antibodies are going to be positive meaning they're going to be elevated compared to the reference range.

I have had some cases where we still suspect Hashimoto's, but those cases are not elevated. But that's very rare in my practice. And so and what's been documented.

And so we really want to look for or start by looking at these antibodies to see is there an autoimmune attack. Then in terms of that thyroid stimulating hormone.

What is that. So TS is a hormone that's produced by our pituitary gland which is sits at the base of our brain. And it's this kind of master regulator of many other glands.

And it interacts with the hypothalamus in our brain. And then it regulates some of the other glands. Thyroid gland is one of the glands that the pituitary regulates.

How does it do that. It makes TS or thyroid stimulating hormone. What thyroid stimulating hormone does is it communicates to the thyroid gland to make hormones and also to convert T4 thyroid hormone into T3 thyroid hormone, which is the more active form of fibroid hormones.

And so when we look at this picture of what's going on with thyroid function, we want to evaluate TS thyroid stimulating hormone as well as free T4 thyroid hormone and free T3.

The reason that these hormones are called free T4 and free T3 is because they have iodine atoms attached to them. So T4 happens to have four iodine atoms attached to them, and T3 happens.

Diagnosing Autoimmune Thyroid Disease

Step three iodine atoms. And the T3. Is that more active form. And so that gives us a bit of a more complete picture about what's happening with thyroid function without signaling from the pituitary.

And then the antibodies tell us do we actually have inflammation here. So in a setting where we have hypothyroidism, we would end. If the hypothyroidism is coming from inflammation of the thyroid gland that is going to be elevated. Why?

Because the two is telling the thyroid come on make more thyroid hormone. It's trying to wake it up. It's trying to activate it. And so the pituitary is sensing less circulating thyroid hormones.

And it's saying like I got to make more TSA to wake up this thyroid gland. And so that's going to be your first sign. And so this is why this is the standard of care test which completely makes sense.

But in some cases we just have to look a little bit deeper to see, well what are free T4 and free T3 doing. Because there could be other causes which we'll talk about that can cause especially that T3 to be low and why people can continue to be symptomatic even after thyroid treatment.

So what I've seen, and probably you have seen as well, and I'm wondering if we can kind of explain why something like this would happen. And I like YouTube because I could, but I want you to is that the person has a normal TSH.

They have a normal free T3, they have a normal free T4, but their TPO is abnormal. What is going on there. So somebody listening to this and they're like oh but my my doctor my GP told me all my thyroid labs are normal and not to worry about this TPO what is that?

Because I think everything is data and I think everything is a signal from your body communicating. And yes, you can ignore it, but you better you don't because you can prevent things later on.

So what is that picture actually looking like? Yes. So a lot of people again, if they don't have those thyroid antibody tested, they would never know, right.

Because there is normal and and they're just going on living their life with those symptoms and, and not having the, the validation or the understanding of, of what's going on.

So what that means is that there is an inflammatory process happening with the antibodies being elevated, but the five function is still preserved sufficiently so that we still have production of T4, we still have production of T3, the thyroid hormones, despite this autoimmune attack.

So what's interesting is this has actually been studied, this phenomenon. And this is why I'm a big advocate for checking thyroid antibodies in people who are symptomatic or people who have a family history.

Let's say we'll talk about root causes of Hashimoto's and all of that. But this is what I'm a big advocate of this because when study, there was one specific study that I'm thinking of that looked at people who are youth roid meaning uttara just means normal viroid function test normal T is sage normal free T 43 youth arid people with no antibodies compared to other people who have elevated thyroid antibodies.

People who are used, normal thyroid function and elevated thyroid antibodies have on average more symptoms of hypothyroidism compared to people with no thyroid antibodies.

Now, again, I've said symptoms of hypothyroidism can be vague and attributed to other things. But all else being equal, if the thyroid antibodies is the only difference in these two populations studied, and our friends here with elevated thyroid antibodies and normal thyroid function have on average, I believe it was somewhere 6.7 symptoms that they surveyed, compared to 4.1 symptoms on average.

And that was a statistically significant difference. Seeing that, hey, just because there's some inflammation going on this on its own can actually produce some symptoms.

And this is why I'm going to just mention another thing that's really important for those individuals who are hypothyroid, who are treated on levothyroxine standard of care therapy, up to 28% in the literature, up to 28% of those individuals are still symptomatic.

And we think that one of those reasons, or I think that one of those reasons, is because of that ongoing inflammation. So they're getting appropriate thyroid hormone replacement treatment, but they're not doing anything about the inflammatory component.

And so that's one of the reasons. Another reason they could still be a symptom symptomatic is because they don't have enough T3. And we can circle back to that.

But that autoimmunity component is very significant. And we can't overlook that. We can't ignore that. And yet it's still not standard of care. We know these antibodies are associated with a higher burden of symptoms.

And yet it's not standard of care for us to check them. Yeah, I think you basically answered my next question, which is why so many patients are frustrated that they get diagnosed.

They start leave a thyroxine, their labs get normal, but they still feel terrible, you know, because we're not looking at that deeper aspect of it. So let's talk about the next question.

So you spent your career connecting the gut to chronic disease. Where does the gut fit into this autoimmune disease. And specifically for Hashimoto's.

Can you make that relationship for us? Yeah, because most people might not be thinking, oh, I've got my thyroid gland up here, I eat and it should be affecting my stomach.

But what is going on here? Exactly, yes. So Hashimoto's is a really interesting model of autoimmune disease because it's very common. It occurs in 1 in 8 women and 5 to 8 times more common in women than in men, actually.

And by the way, for women, over 60, 25% of those women will develop antibodies. So just something to kind of keep in mind how is this related to the gut and what are all the factors that we think are responsible for causing this thyroid autoimmunity?

So I'll start first with genetics, because we know that individuals who have family members who have autoimmune disease are simply going to be more likely to have autoimmune thyroid disease.

And we see this with a lot of chronic conditions. We see this with other autoimmune conditions. These just tend to travel together because there is a genetic component to it.

So sometimes, you know, I will see patients that tell me, but I do everything. I'm, you know, eating a clean diet and I'm exercising and I'm sleeping well and I'm doing like, why did I get this part of it is the genetics.

So part of it is at this point outside of our control. The other interesting part about this is that Hashimoto's travels with other autoimmune conditions.

So if somebody has Hashimoto's, they're actually four times more likely to have celiac disease, which is the disease of the gut. So I'll come to back to that in the context of gluten and diets and whatnot.

They're also more likely to have type one diabetes, rheumatoid arthritis that LIGO again all autoimmune conditions. So genetic component is there attacking different organs and this kind of immune system over activity.

The second component is environmental. And when I think about this environmental component there are different parts to that right. One is certainly certain foods and we'll get into the details of that can be more likely to cause a pro inflammatory state.

Right. And these are I mean, I'm sure our audience here can guess what a lot of these foods are when we talk about added sugar, when we talk about any ultra processed foods, when we're talking about sugary drinks, but also other things that come along with our food, such as pesticides or other additives, emulsifiers in foods, and so forth.

Gluten can be one of those factors for a lot of people. So I'll come back to that because there's like a whole gluten thing here. But those are some of the things that can be tied to the gut.

Again, what we eat in part determines what our predispositions are to certain conditions, how we feel, and so on. So there is that one tie to the gut.

We also want to think about other aspects of lifestyle and stress, because we certainly see this in, I think, any medical profession, I often hear from people when they have an autoimmune condition, when they have a flare up or when they're first diagnosed, they'll tell me, oh, that was during a really stressful time in my life.

So it's not that the stress necessarily brought it on, but the stress exacerbated it and kind of brought it to life. Now there is actually a stress component mediated through the gut as well.

And that is this was in rodent studies when they looked at stressed out rodents, they found that they were more likely to have leaky gut or intestinal hyper permeability.

And I'll get into really what that means. But that's one of the mechanisms by which this kind of in the background

of genetic predisposition, maybe some other lifestyle choices, stressors, environmental factors.

Now we also have this leaky gut. And this can significantly contribute to the manifestation of autoimmune conditions that have likely been brewing or maybe been predisposed to for a long period of time.

So with that gut connection, and again, this is something that I, you know, I like to have, you know, slides and really kind of help people visualize.

But basically when we look at our intestinal layer, it's just a single cell air. It's just one layer of cells.

Why Thyroid Labs Can Look Normal

And so that layer of cells and the bacteria that live around there, right, we have an abundance of bacteria that have more genetic material than our own genetic material.

So we're basically hosts to these beautiful microbes that live on in our tract and elsewhere. But it's really the responsibility of that single cell layer and of those bacteria to keep our guts intact or to keep it what we call selectively permeable, meaning what's supposed to come through, what's supposed to get absorbed through that single layer in the intestine that we're eating, that we're digesting, that goes through what's not supposed to is just passing through and not affecting us.

And why that can it affect us so much. So when we get these to kind of describe them very simply, holes almost this like hyper permeability of the gut, this leaking is what we think is happening is these fragments of maybe residual bacteria or viruses or food particles.

They now suddenly come into contact with the immune system that's associated with our gut. And I'm sure from the pathology perspective, you could describe this way better than I can. But part of our immune system is closely associated with the single cell layer in our gut.

And so what happens is when we don't have these tight junctions between the cells, when they basically open up and they're allowing all these things to come through, our immune system starts to get activated.

It starts to think, okay, well, there's an intruder. We need to react. And as that immune system starts to get activated, cytokines are released. These immune messengers are released throughout.

And we do see actually some signs of this. If we do certain types of gut testing or even certain types of food sensitivity testing where we can see, okay, this person probably has leaky gut because they're making a lot of antibodies, their gut is making a lot of antibodies to certain foods, not necessarily meaning that they have an allergy to that particular food, but really meaning that they're getting sensitized to these food particles all the time because they have leaky gut.

And so this overstimulation of the immune system is something that can kind of tip things in favor of this full blown thyroid attack. Or again, for other people. We see this in rheumatoid arthritis.

We see it in other conditions as well. I think that was a great explanation because Hashimoto's root cause is multifactorial. So it's not looking at one aspect, and the connection through the gut is even itself multifactorial.

And it just reminds me of this patient that I had, which was this woman who came to me and she went to her GP, and her GP is like, oh, you have Hashimoto's and you have lupus.

And she got really, really like nervous and freaked out because she's getting this new diagnosis. She didn't understand what it was. And so the GP referred her to a rheumatologist at Mayo Clinic.

But Mayo Clinic has a long wait list of, you know, six months even to get in to see a doctor. So in the meantime, she had found me and I'm like, okay, let's take a look at this.

And I'm peeling back those layers that you just talked about. Yes. She had made imbalances in her gut. She didn't even know about it because nobody had ever talked to her about one stress.

Nobody had talked to her about her food influence. She was basically living off of diet soda. And we know the compounds they use for like to make it sugar free and stuff has been linked with autoimmunity.

So I'm like, all right, let's rebuild this structure here. So by the time she got to the Mayo Clinic and saw the rheumatologist, those antibodies were normal because that's not what was actually going on.

So that brings me to let's talk about diet. Right. Because I think this is a very big, big part of it. Diet advice for Hashimoto's is everywhere and a lot of it contradicts itself.

So can you share with us what does the evidence actually support, and what do people get wrong about food, specifically soil and cruciferous vegetables, which for our plant based community is is a big part of our diet.

So I want to kind of cut through all that confusing information so people can actually make more informed choices if they are and have been diagnosed with Hashimoto's and feel more comfortable about what they're doing.

Yeah, definitely. And I'm glad you mentioned diet sodas, actually, because there is a study on aspartame. And yes, yes, that's what I was referring to.

Yes, yes. So I'll maybe I'll start with gluten just because this is a big one. And then we'll dive into some other maybe misconceptions or maybe things that are a little bit exaggerated in maybe some of the messaging that, that people here.

So, you know, one of the things that I mentioned, right, is that Hashimoto's is linked to celiac disease. People who have Hashimoto's are more likely to have celiac disease, but the vast majority of people who have Hashimoto's don't have celiac.

They still, however, can have gluten sensitivity. And unfortunately, there's no single test that rules gluten sensitivity in or out. Either than your clinical symptoms, how you feel.

And so a lot of the times this is in my practice. This is trial and error and a very like educated kind of protocol where we then make a decision what makes the most sense for this patient.

Obviously, if there's any concern for celiac, first we need to rule that out because those individuals need to be strictly off of gluten, regardless of Hashimoto's or not.

And so that's an easy one. They need to be off of it. They need to be appropriately diagnosed, monitored for nutrient deficiencies and such. So that stop group of people, people who don't have celiac but suspect maybe I have a gluten sensitivity.

Gut Health, Leaky Gut, and Autoimmunity

Maybe my gluten ingestion is raising those tipo antibodies. That's definitely a plausible explanation. And this is something that's been shown in studies.

My major critique of the studies is that I'm going to talk about a few, but my major critique is that these are very, very small studies. And again, when we talk about nutrition and interventions, these are very difficult things to do.

Because think about it. You're asking people to go on this restrictive diet. You have to trust that they've actually done that so that you can appropriately compare data.

And then you have to monitor their biomarkers. And so this is kind of the one piece that we're lacking if you ask me. Like what would kind of be a little bit more definitive here.

It would be larger studies knowing that they're well controlled and then monitoring these metrics over time to see, does this really make a difference, or what patient profile might most benefit from this.

Right. But why? You know why gluten right. If you don't have celiac why why remove gluten. So we know that there's a link between gluten and increase in in intestinal hyper permeability.

It can increase oxidative stress. It can affect how our genes are expressed. It can affect our gut microbiome. Any change in our diet can affect our gut microbiome.

And you know, now that we have all these comprehensive stool tests, you know, people can see that, you know, we can we can see this. It can increase inflammation for some individuals.

And so typically when I do see a Hashimoto's patient, if they're not already on a gluten free diet, I will recommend a trial of gluten free diet. And why do I do this?

Because there have been several studies showing that individuals with Hashimoto's have an improvement in their antibodies after a gluten free diet. So a few of the studies that I'll that I'll site.

So there was one study that looked at gluten free diet for six months compared to a controlled diet, so they could eat anything they wanted, found that thyroid antibodies were reduced.

The TPP and viral globulin antibodies that I mentioned earlier in women with Hashimoto's in this particular study, interestingly, these people had elevated one of the celiac antibodies, but no symptoms of celiac disease.

So interestingly, this was this kind of population that maybe they do. Maybe they don't have celiac, but the antibody was up. But in this particular population, they found that TPO antibodies and pirate globulin improved on the gluten free diet.

Another study they looked at these people a little bit longer. Instead of six months, they looked at 12 months. It was found that gluten free diet reduced to sage.

Now what does that mean? I said that elevated age means that your pituitary is like working really hard to wake up that thyroid gland. And in these individual who all were on legal thyroxine, so all were getting there if I would hormone supplementation, if you put them on gluten free for 12 months their TS went down naturally.

So is there possibly some recovery of thyroid function? I'm not sure, but it certainly suggests that there's likely some reduction in inflammation and maybe some improvement in function.

And then they did a meta analysis of the studies that were and by the way, the studies that were available. And by the way, meta analysis is when you look at studies that are available and try to kind of coalesce all of the results together so that we can have more, more meaningful outcomes.

But unfortunately, in this case, this is only four studies with 87 patients. So again, like I said, this is my big criticism. We just don't have large data.

But they found that gluten free diet was associated with lower sage values. Higher free T4 which is good right. More of the thyroid hormone available and a tendency.

So in this case they didn't find all the studies together. They didn't find that it was statistically significant. But a tendency towards antibody and thyroid an antibody lowering.

So again we just need more data. But what I do practically in the clinical setting, because we have enough to enough mechanistic plausibility that removing or reducing gluten can help.

And we have enough data from the literature that at least warrants a trial. So what I'll do with my patients is I'll

say, okay, let's try gluten free or low gluten diet if, let's say they're not willing to go completely gluten free, let's monitor your antibodies for a few months, and then let's reassess if your symptoms and your antibodies don't change.

I really don't have a great reason to say off of all gluten, of course, gluten in the context of ultra processed and so forth, it's not good. But if you're going to have a freshly baked homemade sourdough, who am I to say that you can't have that if you are not having any symptomatic change?

And if you're having no change in your antibodies? I can't demonstrate subjectively or objectively that this makes a difference. But I will say that. All of that being said, most people actually do feel better when I when I take them off of gluten.

In the cases of Hashimoto's, they find that energy levels are often better. They find that that brain fog is better, that has lifted. They're feeling overall better.

And I do see in most cases, I do see that drop in TPO antibodies. And we think that when there is a consistent drop in those antibodies, we think that that means less inflammation, less autoimmunity and potentially preserving the part of the plant that's maybe still functioning.

And so that's that on gluten. Now let's dive before we leave gluten for a second, because I'm sure this is at the top of people's mind is one okay. So two questions from the one.

Is that the actual gluten or is it the glycol phosphate in our gluten supply. Because then that leads into the next question which is people who travel internationally say, I feel fine when I'm eating pizza in Italy, but when I come back to the U. S., it's completely different.

I feel puffy and inflamed. Can we kind of break through that myth a little bit and explain what is actually happening here before we move on to the other one?

Yes, I hear this all the time from patients, even people that have had with celiac that go and like, you know, we'll have a little bit of gluten. They're feeling fine even though they're not supposed to really.

But I hear this all the time and we think it's part the hybridization of these plants. We think it's part how it's actually made. And the fact that if you're leaving the dough overnight, you're allowing for the fermentation process.

You're, you know, what are the other additives? What are the other things that are in that food? What's actually irritating you? It's a really, really good point.

So I do I do often hear that I'll have patience, go to Europe on vacation and tell me, oh, I was I was eating pasta all the time and I was eating, you know, baguettes in France or pasta in Italy.

And they're completely fine. And I think you raise a really good point. I don't think we know the full story. And I suspect that in different individuals there is going to be some variation. For some people.

I do think it could be really gluten, just like celiac, but it's kind of like on the spectrum. And for other people it's more, you know, these other additives, how it's made and and all of that.

Yeah. Yeah, yeah. Because I do think it could be either or and it's individual based because somebody might be sensitive to a very specific additive that's in their common pizzeria or whatnot that they have no idea.

All right. So once again, it's more complex than people realize. But the fact is here's some options. Right. So trying this gluten free approach like you said a trial and seeing are we having a change in symptomology.

Are we having a change in our labs. Is that overlying inflammation going down okay. Sounds good. All right. Go

ahead. Continue. Yeah. So and one other thing just to kind of in terms of any dietary changes and whatnot.

You know I think it's really important to keep the big picture in mind. I'm not going to dive too to much into it. But autoimmune protocol diet has been studied in one study, as far as I'm aware in Hashimoto's.

And there were some possible benefits. But these patients also had health coaching support, and there were maybe some other confounding factors. Typically, my approach with patients is I'm not a huge fan of overly restrictive diets because you can run into nutrient deficiencies, but also in patients who, especially those who are more prone to allergic responses.

If you eliminate a food for a long period of time and you reintroduce it, they might now be allergic to that food because their body is not used to seeing it.

So generally, when we do these types of dietary trials, if we do some kind of elimination diet or whatnot, typically we try to do so for four weeks. Let's reassess.

And now let's slowly bring back those foods in again. Sometimes it might take a little bit longer if we're specifically looking at TPO antibodies. So sometimes with a trial of gluten free I'll say well how are you feeling?

Let's see if it makes sense to kind of keep going if they're feeling a lot better. But but generally my, my rule is that let's not eliminate Whole Foods and, and, you know, entire food groups, unless we have very specific concrete data that this is not compatible with you.

And so that brings us to soil and cruciferous vegetables. So a couple of common misconceptions that I know I started hearing when I first started doing functional medicine and kind of diving into an integrative medicine from just doing basic primary care, where of course, you know, in general internal medicine, we didn't learn all these nuances about, you know, dietary change in the context of autoimmunity.

A couple of things that kept coming up were soil and cruciferous vegetables in the context of hypothyroidism, how they potentially could worsen hypothyroidism.

This originated because these are goiter. And what that means is they they block the thyroid ability to absorb iodine. And so then people can develop a boiler.

Now this has actually been studied. So we'll get into that. But in general if you have sufficient iodine levels and this is something that can be checked, there's no need to avoid entire food groups just for this possible theoretical risk.

And so there was a literature review that was done about 20 years ago or so on 14 studies. They found that soil does not affect at the very most it may modestly affect thyroid function.

So again Lit review 14 different studies.

Diet, Gluten, Soy, and Cruciferous Vegetables

They really didn't find any significant difference. The one caveat with soy that I'll say for those people that are on thyroid medications so can reduce the absorption of thyroid medications.

So it's important to either space it out by several hours or just simply monitor thyroid labs. And if needed, thyroid hormone dosing can be increased.

But that's not a reason to avoid all soy, especially for individuals who are plant based. And this is an important source for them. Now in terms of cruciferous vegetables, again these are so nutrient dense.

These are like one of the mainstay components of plant rich diet. I have not found any convincing evidence that that these should be completely avoided.

And again this is something that we can monitor. We monitor labs, we monitor antibodies and thyroid function. And if somebody is consuming cruciferous vegetables and their thyroid function, their symptom, their labs are good.

Why suddenly, you know, remove them. These are highly nutrient dense foods. And so again, in my practice I typically say, you know, absolutely people can consume these okay.

All right. Yes, I would I would agree definitely. If you're on levothyroxine you just want to take it farther away, consume soy and foods farther away.

But the nutrient density of these foods way outweighs of the actual minimal effect. Right. So this is about looking at the big picture. Let's get tactical.

Which micronutrients actually move the needle for thyroid health. And so what are the specific micronutrients we want to be thinking about. And maybe you have some plant based recommendations on how to incorporate them.

I mean me myself I'm just thinking, all right, I've got Brazil nuts in the cabinet over there. Once we're done our interview, I'm gonna go grab mine. Right.

So from a plant based perspective, can you give us the nutrients and what are some plant foods that people can start incorporating? Yes. So I like to start with iron here just because.

Iron deficiency is so common. And especially when we think about hypothyroidism Hashimoto's more commonly affecting women and then women also being more likely to have iron deficiency, at least during their reproductive years.

This is one of the big ones. Iron is important in producing thyroid hormone, and actually ferritin under 30 increases the odds of low T3 low that active the most active thyroid hormone, by almost two times compared to normal iron stores.

And so it's really and this is by the way, this is even in people free of fibroid disease. So this is just pure correlation based on needing that micronutrient for thyroid hormone production.

So this is this is an important one. It's also something that I see very very commonly as a deficiency. And unfortunately it can often be missed for two reasons.

Number one, if a patient is not anemic, which there are plenty of people walking around with iron deficiency who are not anemic, sometimes they may not get flagged by their physician as something to attend to.

And the other reason is that with our common labs that we use here, iron ferritin levels are typically. The reference range typically starts at around 16, which is very low when we look at the literature and when we look at I just told you, ferritin under 30, you can increase the odds of low T3.

And this is a vital hormone that you need to be circulating is just not going to cut it. And so when we think about I was just in this midlife mastery group with some practitioners and we were discussing, you know, ferritin levels in dermatology, they typically recommend ferritin at least 65 if somebody has hair loss.

And how common is hair loss in people with hypothyroidism. So why are we looking at 16? I really don't understand. And so anyways iron deficiency can be missed for those two reasons.

And it's very common. So this is why I like to start with it. It's really really important that we're getting enough iron. And then not to mention some of the symptoms of low iron can mimic symptoms of hypothyroidism such as hair loss, fatigue depression or concentration cognitive function.

So we want to make sure this nutrient is available. And it's there for people who consume a plant based diet. You know, definitely things like white beans, lentils, spinach, great sources of iron.

Make sure you consume them with vitamin C so that you're getting better absorption. And then, if needed, iron supplementation to accordingly support those normal levels.

Yeah, yeah. And I love I think lentils is a staple. Whether you're doing lentil soup or you're putting lentils on your salad, you can even like with cooked lentils, put them in the oven and Chris them up and have them as like little toppers.

I mean, there's so many ways to do lentils, I love that. Yeah, yeah. Now selenium you mentioned Brazil. So we're going to go right into selenium. So there is some evidence that higher selenium levels are associated with lower odds ratio of autoimmune thyroiditis, hypothyroidism and enlarged thyroid.

And why is that. It's because selenium is an antioxidant, and making thyroid hormone is an oxidative process. You know, a lot of things in our body create oxidative stress and oxidative stress.

The reason that that, you know, we talk about it is because it can create and invite inflammation. It can cause DNA damage, it can cause all these things that are undesirable, but they're part of life. They're part of our biochemistry.

And so we want to have selenium to help neutralize that. And so this is why people with those higher levels, we think, have lower odds ratio of autoimmune thyroiditis, because they have that reserve.

Now, one of the issues is that our our selenium is decreasing in our soil just because of the way that we farm. And so it's really important that we're getting enough.

I will say in my patient population, I'm generally seeing levels in the normal range. And if anything, there's been such an awareness of it that I'm sometimes even seeing high selenium levels.

And the reason is exactly what you mentioned is sometimes, you know, people read that Brazil nuts are a great source of selenium, and they might have quite a bit, or maybe they have selenium in their supplement.

And in addition they're doing Brazil nuts. Don't do that. So for Brazil, that's because they have approximately 68 to 91 micrograms of selenium per nuts is what I read when I was researching this previously.

And so and the only really need about 200 micrograms, right. And so 2 to 3 a day is perfectly fine. And as long as those levels are getting monitored, because we also don't want selenium toxicity and liver enzyme elevation as a result, I've never seen any kind of significant selenium, but I've certainly seen elevated levels where I'm like, okay, let's stop all sources for a while, and then and then just make sure we're in a maintenance phase. So or another option if people don't like Brazil nuts or allergic, definitely having selenium in a supplement if if they find they're not getting enough from diet.

Okay. So we are limiting our Brazil nuts. It's hard to do because when we eat nuts we love a good handful. So 2 to 3. Now would that be for somebody just on a healthy.

Like they don't have any evidence of Hashimoto's. Or would that be for our Hashimoto's person even for a Hashimoto's person? I mean, unless the levels are very low, which again, I haven't seen in the practice, somebody with overtly low selenium, but typically the upper limit of normal from my understanding, is 400 micrograms per day.

But again, we really that's like really, really the upper limit of normal. So typically I have people stick to about 200 micrograms. And if I saw that their levels were still low with that I would I would ask them to take more.

But that just hasn't been the case so far, because I think I think there's a great awareness. I think people are getting enough. Yeah. Okay. Perfect. What other, compounds should we be thinking of when we come to micronutrients?

So the other big ones are iodine. And then I'll address vitamin D as well. And we'll see if we can get to any of the

other ones. But so I done is very interesting.

So you know I done is a double edged sword. We don't want to have too little and we don't want to have too much. And what's very interesting, right, is, is we used to associate iodine deficiency with goiter.

Right. And this is what happens in countries where there's not enough iodine in the food and so on. But also we started noticing that when I started to be more prevalent and when again, this is based on population studies, when people started to take in more iodine on average, that we started to see more Hashimoto's and more autoimmunity.

Key Nutrients for Thyroid Support

So you don't want to little because your eye, your thyroid relies on it, but you don't want to much because there is this association towards autoimmunity in individuals, especially in individuals who are predisposed.

Unfortunately, there's no great gold standard iodine test. It is available as a test in urine and in serum, and I typically start out by testing it in urine in my, again, higher risk patients in my Hashimoto's population, because this is how it's tested in population studies. So I start with a urine test.

And if it's low then I'll typically also check a serum iodine and see if these numbers correlate and if we can really trend them out. The likelihood is the person is really iodine.

And I'll have them. I'll just tell them, you know, just make sure you're consuming the same diet that you always do. So because levels can change based on what we eat.

And so, you know, don't have, you know, like ten bags of seaweed the night before because it's probably going to be high. Just consume your normal diet and let's check your iodine on your typical diet.

And then we supplement accordingly. The day for iodine in non-pregnant non lactating adults is 150 micrograms per day. The recommended daily allowance, which is usually what is in a lot of multivitamins.

But again important to to always check and kind of flag that or iodized salt, which you know, we're not having a lot of iodized salt these days. They typically will remove the iodine.

So I've been telling my patients in that in that case of deficiency, make sure your salt is iodized in terms of in terms of iodine absorbed, I mean, there are things that can reduce our iodine absorption.

That's another reason why we might be low in iodine in addition just not consuming enough. So the bromine that's found in plastic containers, baked goods like that could be the reason that we're mal absorbing iodine.

So really, you know, just something that we want to be mindful of testing again with a qualified provider. And then really if supplementing making sure we're doing so appropriately because it is really this double edged sword, do you feel that iodine levels have decreased once individuals moved away from the iodized salt to now Himalayan salt or something like that?

Have have you seen any differences there because, you know, almost for two decades it's like, okay, let's not have this kind of salt anymore. Did you notice anything there?

It's a good question. I don't know that I have a longitudinal sample enough to say that because I only started checking iodine in my practice probably seven, seven or so years ago, but I suspect it could be part of it. Now.

The other confounding factor to that is probably more people are on supplements now, and multivitamins that contain that 150 RDA of iodine. And so it's hard to it's hard to correlate because I do think more people in general are supplementing supplementing.

Okay. So we talked about selenium. We talked about iodine. We talked about the iron and ferritin. Anything you want to give us on zinc or vitamin D that we should just be aware of.

Yes. So vitamin D. So this is a big one right. We know it as our vitamin that's essential for bone health for preventing osteoporosis. But it's also a big immune regulator.

And with vitamin D it also has these kind of multifactorial functions where we take vitamin D because we know it helps to support our immune system to fight off infections.

But we also take vitamin D because we know it helps to regulate our immune system and T cells, especially this, the part of our immune system that kind of calms down that overactive response.

And we know just from so many studies, again, looking at autoimmunity and vitamin D that people generally with higher vitamin D levels tend to have less autoimmunity and vice versa.

So I do use this. I mean, I make sure that all of my patients vitamin D levels are normalized. But in my Hashimoto's patients and people with autoimmunity especially, we do generally aim for a little bit of a higher range.

So typically with our standard labs, it'll say, you know, somewhere between 30 to 100, let's say. And when you're above 30, at least you don't have a deficiency or insufficiency.

So that could be considered good enough by a large body of research in integrative and functional medicine, where we're personalizing care and we think, you know what, maybe we can get some extra benefit based on what we know, based on what we see in practice and the research.

We do increase that a little bit. So generally for most people, it could be 40 to 80 or 50 to 80 somewhere in that range. So I generally am a little bit higher.

But again we don't want to go to high because there are side effects of too high vitamin D. And so with vitamin D just a you know, a few things in terms of it's a very, very common deficiency.

And I do find that I have to supplement patients. It's not something that they're necessarily just going to get through food or even through sunlight.

And now that we're again more aware about blocking the UVs and so on, I typically do have to supplement a couple of things that I do. One is that I do supplement it with vitamin K2, and this is to make sure to help calcium.

Again, this is more bone related as opposed to thyroid. But to make sure that that calcium that gets absorbed because of the vitamin D, that it goes to the bones as opposed to the arteries.

And then number two, if you're taking vitamin D3 with K2, these are fat soluble vitamins. And so they're not going to get absorbed if you take it on an empty stomach or with no fat.

There are some formulations that I recommend that are already in these liposomal solutions that already have the fat with it, but normally most of these supplements are fat soluble, so it's just important that they be taken with with an actual fatty meal or something of that sort.

And then should we do zinc really quickly? Let's do zinc. Really. Yeah. So zinc supports our immune function. It helps to support cell division as well.

And it also helps to convert that T4 to T3. So a deficiency could potentially be something that can impair that conversion I will say with zinc as well because I'm seeing more and more even just patients that are coming to my practice, like not patients that have specifically recommended it to more people are coming on zinc supplements.

More people are reading about it. So I do think there's a greater awareness. And that zinc deficiency I don't see

very often, but it's important to not overdo the zinc supplementation because that can impair copper absorption.

So there is this copper zinc equilibrium. So I do if I see a very high zinc dose or a high zinc level, I will check a copper just to make sure that we're not, you know, somebody is not becoming copper deficient, but it is important to maintain those in normal levels.

And there's an old study that actually showed in documented zinc deficiency, zinc supplementation will correlate with increase in T three. So this is really a big thing.

And then for people you know who could be at risk, it's usually people after some kind of GI surgery with inflammatory bowel disease. And that goes for a lot of these nutrient deficiencies.

Right. People who may be more prone to them might be people with preexisting gastrointestinal absorption issues. But I will tell you, for the common ones like iron, vitamin D, and I know we didn't talk about B12, but B12, those are like my common deficiencies that I see in people with no GI issues whatsoever.

So those are just some of the ones to watch out for. Yeah, absolutely. I think you've really walked us through a great layout of this. Like, what are the labs that we need to be looking for beyond just the TS?

Like really looking at that full picture of, okay, the thyroid full panel, plus all the additional labs because there's underlying things going on, plus the more advanced maybe functional labs.

Quite a big picture. You walked us through some of the different nutrients, micronutrients that individuals need to be like making sure that they're getting enough of.

So it's not a you've been diagnosed, you take leave of thyroxine and the problem is solved. I think that's the big message here, is that even taking a medication, that disease can progress.

And for me, from a pathologic standpoint, those lymphocytes still go invade the thyroid unless we get rid of all those things before that are our underlying causes, the root causes.

And we support fully, not just with this medication. So I think that's really what brings us to that integrative approach. You know, that more holistic view, which means you have both been very well trained.

So last question for you. And I want to be concrete.

Practical Next Steps for Hashimoto's

Somebody listening right now has Hashimoto's or thinks they might have Hashimoto's. What are the three things you would tell them to do this week? So let's be specific that they can actually do on their own before they get to like, you know, the doctors and stuff like, what is three things we might want them to do.

So number one, I would say definitely with symptoms, you know, sometimes we tend to like brush it off and say, oh, it's because I just tired or stressed and and so on.

I would say, don't delay. Definitely get to a doctor, do your lab work, make sure you you make a list of your symptoms if it helps, like write it all down, have it in your phone because I think it is something very important not to overlook or to delay.

Number two, just the and pick any of these like just the pillars of wellness, the foundational pillars of wellness. So whether it be nutrition, getting more whole foods, kicking out those ultra processed added sugar, whatever feels doable and whatever feels actionable that one desires to do right now, I think, is fair game.

You know, whether whether that means, you know, incorporating more plant rich foods into your diet or removing something from your diet that doesn't resonate and that's that can be pro-inflammatory, that, you know, that we

discussed the final thing I would say, and again, this could be any of these foundations of wellness, of health, you know, sleep stress reduction, meditation, mind body practices, dancing, you know, any kind of movement of the body.

We know that this helps in general well-being. We know it helps to reduce risk of many chronic conditions. So again, any of those pillars of wellness that that resonate, that one feels ready for, I would say, you know, go for it, tackle that.

And one thing at a time, when we work with patients, we don't expect people to make changes all at once. And we don't expect that of of ourselves, like everybody has, you know, different stressors and obstacles and time management.

So I would say, you know, pick those things that are doable, that are within reach, and then and then get the labs check, get the medical care perfect.

All right. Thank you so much. I think, Doctor Bojana, this has been really a kind of the actually the nuance that our audience needs to hear. And I thank you for bringing so much clarity to a topic that really gets oversimplified so often.

A doctor Bojana can be found at drbojana.com and on Instagram at Doctor Underscore Bojana, where she shares more on integrative and functional approaches to thyroid and hormone health.

Here's your key takeaway for today's session a normal lab value is not the same as a healed body. If you're still struggling, that's information and not failure.

So stay tuned for another episode. And thank you so much. Thank you for having me.