Escaping Thyroid Purgatory: Adaptive Physiology & Thyroid Regeneration – With Dr. Eric Balcavage Transcript

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Introduction to Adaptive Thyroid Physiology

Hello, welcome to the Thyroid Pharmacists Healing Conversations podcast. I'm your host, Dr. Isabella Wentz, your thyroid pharmacist, and today we're going to be breaking down how thyroid conditions can result from adaptive physiology rather than conventional dysfunction models.

And I have a very special guest here with us who happens to a thyroid expert as well, somebody that I've been hoping to interview for quite some time, one of the joys of having my own podcast is that I get to have really interesting guests on and I got to pick their brains.

We're going to be diving into the thyroid purgatory, why you might get stuck there, and what to do about it. Today's guest is Dr. Eric Belkovich. He's the leading functional medicine practitioner with over 25 years of experience specializing in thyroid and chronic health conditions.

He's revenue lucidizing thyroid care through his innovative strategic thyroid solution approach. The doctor of chiropractic from Palmer College. and certified functional medicine practitioner.

He also has a podcast. I'm super excited to be a guest on the thyroid answers podcast, he co-authored a book called the Thyroid Debacle and is known for his groundbreaking work in interpreting thyroid physiology through an adaptive physiology lens.

Dr. Eric, it's so wonderful to have you here. Well, thanks for having me. It seems like it has been a long time coming. I know. Time just has flown by.

I've had some clients and friends that have really been big fans of your work, and they've been saying, like, you really need to connect with Dr. Balcavage.

You guys need have a conversation. We need you to collaborate. So I'm super excited that we get to do this today. And I am personally very excited about adaptive physiology as well.

Some people may have never heard of this concept. Can you tell us what exactly adaptive physiology might mean? Yeah. In general, especially when it comes to thyroid physiology, we think that, oh, the thyroid gland broke.

It just doesn't make thyroid hormone anymore or that the body forgot how to convert T4 to T3 or it's mistakenly increasing the conversion of T to T4 to reverse T3.

Or when it comes to the immune system that the Immune Inflammatory System just woke up one day and decided your thyroid gland is no longer part of the body that I recognize anymore, I'm just gonna destroy it.

And I don't think that's the case. I think initially in my training, I thought that was the case and followed the work of Datis Karazian and others. And it's kind of where we all kind probably started from a thyroid perspective.

Datiss was kind one of the guys that were really helping us get a better understanding of it. But the longer I started working with thyroid clients, started trying to fix the problems I saw.

T3 is low. Get them T-3. Try and manage Antibiotic values or try and manage lab values. And I, I was frustrated people. Some people would get better. A lot of people wouldn't get the way we anticipated following the, you know, doing the kind of protocols we learned in functional medicine.

And I met up with a friend of mine, Dr. Ben Lynch, and we were having a conversation and that we. Speaking at his conference, I was speaking at this conference.

We're working on on prep for the conference and he said, you need to read this paper on the cell danger response. And when I read the paper by Dr Robert and the sell danger spots, like the light bulb went on for me, Oh, this isn't broken physiology.

The immune system is not out of control. It's not like it doesn't recognize tissue anymore. This conversion issue is an adaptive response. And so once I read that, I was like, even though he didn't talk about thyroid physiology in that paper, you could see what happened to all the other nutrients in the body and how the buddy adaptively said, hey, we're going to use tryptophan for this pathway, not for the pathway.

And while it didn't make us feel good, it was the appropriate response.

Cell Danger Response and Thyroid Conversion

And so I reached out to Dr. Navio and I said, hey, you forgot thyroid physiology. Where does that fit in? And he said Eric, I don't know anything about thyroid physiology.

It's not really my thing, but I'm sure there's a piece to it. So that led me on my journey. I started really digging into the cell stress response, what happens within the sell, talking about the mitochondria as the self danger response.

And when the Mitochondria sense danger due to bacteria, viruses, infections, inflammatory mechanisms, emotional stress, how that triggered an adaptive down regulation of cellular metabolism, not because it's broken, but because that was the way that the sale could adaptively protect and defend itself.

Once I started figuring out how that piece related to the T4 to T3 conversion piece, then I starting asking the next question, well, how does that relate to thyroiditis in general?

And then that led me into oh, these damaged cells and these organisms release damps and PAMPs, and oh my gosh, the thyroid cells themselves have receptors for these damp and pAMPS.

And when these same particles that activate the immune system bind to thyroid gland, it actually turns our thyroid cell into immune-like cells that actually activate, they release of inflammatory chemicals that attract all the cytokines in the lymphocytes that create damage to the tissue.

And I thought, man, this whole process is likely an adaptive response, especially in the onset. And then that led me to the next process, which is what happens when we start to overload the body with hormone in an effort to try and optimize the lab value?

Is there a potential risk? So I looked through everything through the lens of the cell stress response. What's the state of individual? Are they in homeostasis or are they an analesthetic or cell danger physiology?

And if they're in homeostasis, give them T4, a little bit of T3 to replace what the gland can't make, they'll feel fine. But if their in adapted physiology, you can give all the thyroid hormone you want, and it may provide a temporary change, but it might actually create more issues and problems for the patient in the long run.

You know, it's so, so fascinating. And I have so many questions for you. It makes so much sense that this would be a way that the body would respond when it is essentially under stress.

People have always talked about how women have more cases of thyroid disease and autoimmunity and Hashimoto's. I was trying to put together all the factors.

have hormone fluctuations, and women are a greater risk for this, a great risk, for that. And eventually, I came across that same paper that you mentioned, And I settled on adaptive physiology as the path, because it's like,

what our body is always trying to protect us, right?

And so let's just use that example of a famine. If we were in a it wouldn't make sense for us to have a really fast and good metabolism. If we were in a famine and our body and mitochondria and brain and everything within us was sensing that, it would actually make for sense to slow down our metabolism in order to help us survive, right?

If under threat of war, probably not the best time to good time for you to hide in a cave and take lots of naps and hypothyroidism will help you with that.

Hypothyroidism help with being less social. You'll take more napse when you have hypathyroid and your reproductive drive as well as ability to like have children is going to go down.

And so it just makes so much sense when we think about the body as always trying to protect us rather than the Autoimmunity is oftentimes describing as self-attacking self.

But when we look at it from an adaptive lens, we can see like, oh, my body is doing this to protect me. And what are the messages that I'm sending to my buddy or that my bodies receiving from my environment, inner or outer, right?

That are leading the body to get into this stress state, Right? Yep. With conventional medicine, they're not really considering that path, those pathways.

It's essentially like you have a thyroid condition and you do have autoimmunity. We're going to give you a drug. Sometimes we're even going be stingy with the drugs.

What do you think is the biggest challenge with that? I think the allopathic model, and I came from an allopathy model. So, I understand it, right? This is how we were trained.

It's a very linear way of thinking, very reductionist way thinking. If this value is high, then we give something to lower. And if this is low, we get something raise it.

if there's disease I treat, if not, don't treat. From a thyroid perspective, for whatever reason, and we can spend lots of time talking about why they landed on TSH as the one and only marker that they were going to look at.

But I think it just simplified things. When T SH is lab high and free T4 is low, then we give thyroid hormone T 4 because the gland can't make it anymore.

And That's where they leave it. They don't really have a strategy. What if it's not converting well? That is not really what their focus is. So I understand.

Do I agree with that's the way it should be? No, I don' agree it way to be. I understand the model, so I no longer get upset about that model. They have a job to do, I have the job do.

Their job is, if the thyroid gland is diseased, we're going to provide what it can no long make. And we do that with everything. If you have high blood pressure, and we give you blood-pressure medication, you don't really worry about what's causing it.

You have glucose resistance, We put you on a medication to force more glucose, either reduce the glucose absorption, or manipulate glucose regulation somehow, but we don' We don't try and figure out why that's going on in the first place.

Look at what's goin' on with GLP-1 drugs. Everybody's on GLp-2 drugs, and we have to say, well, wait a minute. You know, from a functional standpoint, we'd say why is your GI tract not making appropriate GL p1?

Why is the GL P1 not signaling that working? But that their model. So it works for some people some of the time,

but it's got problems. And so, To me, I used to be angry about it, and now I'm just like, they have a job to do, have job do.

My job is to help somebody recover from a thyroid condition. And I know the allopathic community gets beat up a lot because they don't run thyroid antibodies and their people are upset because didn't have thyroid antibiotics.

They don' know if it's an immune issue. I fully believe that the vast majority of endocrinologists believe it is thyroiditis that's causing it. It's immune driven process.

they're not going to put you on immune suppressive drugs for it they believe the immune condition is only affecting the thyroid gland, and therefore, we don't have to worry about just going to destroy the gland and we'll give them what the glands can't make.

But it's very short-sighted. And we know now there's plenty of literature and research out there that shows that when you have one autoimmune condition, if you dont address what triggered the first one, you're likely going have more auto-immune conditions and its problematic.

So I think they have a They do what they do. They're great at crisis care and disease management. And if that's all somebody wants, they don't want to change their diet, They want change your lifestyle.

they Don't wanna try and find out the why and they just wanna manage. That's what allopathic medicine is really good at. But that where we need to differentiate ourselves.

and I think to some degree that we've kinda a little bit going off the rails. I'm so happy that more people are coming to functional medicine as a profession.

The problem is we're bringing in allopathic philosophy with us as they come into the functional medicine process, and they're using different. drugs or different hormones or supplements to manage lab values.

And that's still allopathic medicine. All's we've done is greenwashed it. That's not really what the foundation of functional medicine is about. I mean, you talk about this in your book that you did, I don't know, 10 years ago or so, root cause medicine, well, that what we should be doing when we assess somebody's thyroid physiology is say, What's driving this process?

Because the body is trying to protect us. That's why I hate the word autoimmunity. Because it sets up the stage that your immune system is attacking you for no apparent reason.

And it just doesn't happen that way in most cases. The immune systems is just trying protect this from something. Even when somebody argues, but it's attacking my own tissue.

Right. But there's mechanisms that still are adaptive. that go on and there are certain situations where some of the organisms, these fun little bugs that are in the system that're creating issues, are actually changing our tissue structure, citrullinating them, and now they are no longer really our tissues because they've been modified by some these organisms.

Why Conventional Thyroid Care Falls Short

So, we have to do, I think in our side, we have to get back to our roots and we need to guard the gate. Like, okay, it's great to come in, but leave that philosophy back there.

And now we're not just going to use different hormones. It's not, just, oh, they only do T4. We're going do to T3. They're missing that part of it. That's the answer either, because what we see in our side of that is people are so busy trying to optimize T three and think that that's answer.

I get a lot of those clients as patients because they're on massive doses of T3 or they cannot tolerate the T-3. And I

can go into all the mechanisms why adding T three may be totally inappropriate for a lotta people and create problems.

But I think both traditional endocrinology has its weaknesses. I to some degree, the integrative and functional model has some challenges. That's why I came up with this adaptive thyroid model to say, hey, let's stop looking at this as broken physiology.

Let's start looking what it is for most people, especially early on, an adaptive response to something. That is the foundation of what functional medicine should be, in my opinion.

I totally agree with you of coming from a background of being a pharmacist. Essentially, some people are practicing green pharmacy when they get into like the integrative medicine side.

So instead of giving a person one medication, they might give them 10 supplements in an effort to do the same thing. With autoimmunity, with Hashimoto's thyroid condition, it's labeled as autoimmune, so your immune system is attacking you.

The traditional conventional medicine approach for many auto immune conditions, not necessarily Hashimoto's, would be to suppress the immune rather than listen to why the immune system might be attacking the thyroid.

And some of the things I've seen in integrative medicine is like, okay, let's give you these immune-suppressing herbs, or herbs to drive this part of their immune systems up and drive part the system down, where if we asked a few more questions, took a couple more steps back and asked the question, well, why is the new system out of balance?

there could be an infection, parasitic infection that can cause the immune system to get out of balance. And going after the infection might make more sense than putting somebody on immune-suppressing therapies, whether they're drugs, weather they are herbs, meditations, chakra, healing things, for 10 years of their lives, right?

It's like finding what the root cause is. Right, so if somebody's got a TH17 upregulation, right, that is very pro-inflammatory. That'll create a lot of cytokine release.

It'll And we could come in there and try and suppress TH17. But then we should be asking the question, why is TH 17 elevated in the first place? TH-17 is like the prime defense of our mucosal barriers.

So it should lead a clinician, if they do that type of testing, to say, I don't just want to suppress Th- 17, because now I'm actually working against what the immune system's trying to do.

It's try to defend itself. I should ask the questions, Why is that Th17 elevated? Well, is it an extracellular organism that's driving it up? Is it a fungal infection?

Huh, if it is a funnel infection and suppressing the TH17, what's gonna happen? I'm gonna become more susceptible to a fungus infection. So I may have some temporary drop in the inflammatory cytokines and I might feel a little bit better, but I made just left myself open to more chronic mucosal membrane issues and infections.

And I've kind of taken away that defensive barrier. Yeah, in the most extreme situations, I see this with like immune modulating medications where a person might start it for a condition and they end up with cancer or like a really serious infection that technically the physicians should test for.

But your immune system, it's like you're just turning off the messenger instead of figuring out what the immune is trying to scream at you. I would love to get back to T3.

There's a big situation going on with natural desiccated thyroid and the FDA coming to regulate that. And a lot of patients are speaking out because T3 is oftentimes something that's made a really big difference in their lives.

But we also know that there are some people that might have genetic variations for why they're maybe not able to make T-3 out of T4 or But there's also a lot of adaptive physiology reasons.

Can you speak to why, if you have a thyroid issue, taking T3 medications might not always be the answer? What else is going on that can cause you to have low T 3? And how do we work with that?

Sure. So if somebody had their thyroid gland completely irradiated or removed, or they had full T4 replacement that they're totally suppressing the thyroid.

The thyroid glands makes maybe 5 to 10 micrograms of T3 per day. They may need 5-10 micro grams per. But if their T-3, total T 3 or free T three are still low, then we should ask the question, not, oh, I should fix it.

I shouldn't give more. But why is the body adaptively decreasing the conversion of T4 to T3? And the number one mechanism is inflammatory mechanisms. If there's inflammatory processes going on, cells adaptably decrease the conversion of T4 to T3.

Now, it's not uniform across all tissues, which I'm sure you know. The hypothalamus upregulates, and the brain tissue up-regulated. Why would the body adaptively do that?

Because if you're under danger, what do you need to work? You need your brain to works, so you kind of ramp up there. But in general, peripherally, there's a general downregulation of D-itinase II, the primary converting enzyme.

And if you have inflammatory mechanisms, there's going to be adaptive decrease of T4 to T3 as a protective response. Now, why would the body do that? When a cell, T 3 is the active, primary active hormone inside the cell.

When you bring T 4 or T three into the sell and you convert T four to three, That T3 drives metabolism. It drives the mitochondria. it drives gene replication.

And it does all these wonderful things. But if there was, let's say, a bacteria, or a virus inside the cell, the cells is saying, hey, there's something in here that's threatening me.

I'm going to stiffen this cell membrane. When you stiff in the membrane, it's reduced transport. Reduced oxygen comes into the sell. reduced nutrients come into this sell, but it also traps whatever that is inside this cells so the self can get it.

The cell increases free radicals to try and find and kill the threat, whatever it is. And if you had the cell making free-radicals, to kill-the-threat, and you have your mitochondria running at full tilt with lots of T3, then every time you make food energy into cell energy, into mitochondrion, there's exhaust.

It's called free radicles. Normally, in a healthy cell, You make free radicals exhaust from your mitochondria, but you make antioxidants that take care of it.

And so we have a balance and everything's good.

Low T3, Thyroid Purgatory, and Root Causes

But if I'm de-stiffening my cell membrane to prevent things from coming in and feeding this infection that's inside the cell, and I am making free to fight, to deal with the organism, and I was having mitochondria going at full tilt, I would make way more free radicals than I have antioxidant capacity.

And that could lead to damage, destruction, then we'll call apoptosis or death of the cell. So the sell adaptively decreases T4 to T3, slow down mitochondrion.

Mitochondria actually start to fuse together. We have fewer mitochondry. The mitochondrial actually becomes more efficient. with making fruit energy into cell energy, but we lose what are called the proton leak channels, these

UCPs.

So we actually lose some of the heat production that we get from excess energy inside the cell, But it's an adaptive response. The inflammatory cell stress mechanism is probably the number one reason that somebody sees reduced T4 to T3.

Are there genetic predispositions that could cause reduced t4-to-T3 conversion? Absolutely. Now the literature, from what I've read, it's about a 20% reduction, okay?

So in general, if somebody was healthy, healthy physiology, they still might be in 190 range and still function really well. I don't think it is the number one issue for most people because they've adapted to that over their lifetime.

The third reason that most have reduced T4 to T3 conversion is because many times they're overloading the system with T4. And when you overload the T 4, that T four sends a signal to the cell and the cells the increase, the ubiquitination of D-Idenase 2, which essentially means it takes that converting enzyme and turns it off.

Okay. So once the cell starts to perceive increased T4 in the bloodstream, it says, whoa, there must be hyperthyroidism. We're not going to convert more.

Those are the three big mechanisms, but I'd say the number one is that there's some type of cell stress inflammatory mechanism going on. And if you've been diagnosed with thyroid condition, the most likely thing that's going is you have upregulation of your immune cells, TH1, Th17, CD8, and they are driving inflammatory mechanisms.

So that the number one to me. That makes so much sense. There's a whole host of reasons why those immune cell might be out of balance. It could be stress, it could infection, fasting, injury.

It could be a nutrient deficiency. And rather than, you know, I feel like a lot of times people will say, okay, well, we're just going to give you more T3 without looking into what might be driving that pathway.

I have heard you discuss thyroid purgatory. Tell us what that means. Yeah, thyroid purgatory is this state between where you were before you got diagnosed and where your after being diagnosed to put on medication.

So you don't feel well, you finally get a diagnosis. You were probably in purglatory or at the beginning of purgalatory you get diagnosed finally and somebody puts you on medications and you feel better initially, but then you plateau.

And then somebody starts trying to optimize your T4 or optimize or T3 or optimizer reverse T three, and you just can't get to wellness. And the reason is, is because you're still not addressing the real root issues.

The issue is in up regulation of the cell danger mechanisms, the inflammatory mechanisms. So you can manage a lab value. but you're not going to restore homeostasis while there's still a persistent cell stress response with just giving more medication.

It just doesn't work. So people feel better than they did before they got medication, but they're still tired, they still fatigue, They still can't lose weight.

Their brain still doesn' work well. They're heavier than They want to be and they just Frustrate and they probably have hormone this regulation, you know, and unfortunately, in a very reductionist model, we say, well, that's a hormone problem.

So we need to optimize your sex hormones. That's an adrenal problem, so we needed to advertise your adrenals. Yeah, it's blood sugar problem so. We have to put you on something to optimizer your blood.

Sugar and what. We're missing is that none of this stuff works in a vacuum. It all works on cell signaling and

process. it's all connected piece. So the reductionist model works really well to learn initially, but it doesn't work well in practice, especially in this model in an allopathic model.

Works really. Well, I only have to optimize this one lab value. Easy in this model and a true functional medicine model, even though I talk to the lens of thyroid physiology, you talk through the lense of our physiology.

I would bet. that, or hope, I'm hoping, that your focus isn't on optimization of labs through manipulation, but the goal is I need to be an expert at gut physiology, stress physiology.

adrenal physiology sex hormone physiology because if you just, what we see a lot today is, oh, i'm going to optimize everything and then we'll see where you are.

Well, you're assuming the person's in homeostasis and they just can't they just can't do it anymore versus they're in allostatic regulation. And when they are in a cell danger or allostat regulation, the things we put into the body may not work the way we want them to as if the person was in homeostasis.

Yeah, and I think it makes so much sense because we tend to want to simplify things, but the human body isn't so simple, right? Like, we don't have hormones that live inside of a vacuum.

They all interact with one another. And a lot of times I know when I work with individuals or they come to my website or my social media channels, they're really concerned about interpreting their thyroid labs.

Like what does this mean? What does it mean, what is this means? And, a lotta times, I'm saying like, actually, we need to look at your stress response and we'll need a look your gut health and maybe look some of the different toxins that you are exposed to to try to figure this out because just getting on more thyroid hormone, people, like you said, they get better initially and then all of a sudden they crash.

Potentially their cortisol clearance is increased once their hypothyroidism is corrected because those hormones talk to one another. I'm curious, what is your approach to bring a person back into homeostasis?

What are some of the buckets and checklists that you're going through? Like what are you working on with your clients to get them to feel better? Everything.

So in my book, I talk about fitness factors. These are key areas that either either improve our health and well-being or or cause our demise. And so in the book I talked about 10 different fitness, factors now I have 18 different 50 fitness factor.

So we're talking about dietary fitness your habits, your habitual fitness. Like what do you do on a daily basis? Right people. often do stuff automatically, but don't really look at what am I doing on a day in, day out basis that's either contributing to improved health or deteriorating my health, right?

So I want patients to, what are your daily habits? Three days, What are you doing? I wanna look their mindset. Mindset fitness is really important. Do you believe your immune system is attacking you?

Do feel like your body's being destroyed? You believe that you can't heal and repair? do you feel you're gonna be diseased forever? What's going on up here that's changing their physiology?

Because what we believe influences our physiology, right? If I'm telling myself on a regular basis, my immune system is attacking me, attacking, me attacking.

That fills up fear that winds up the limbic system, that wind up, the sympathetic system down regulates the parasympathetics. No wonder. None of these people have very good gut function and sex hormone physiology.

Why would those work? I'm in danger constantly. So mindset's key. We talk about physical fitness and we have to have good physical fit. It's not too much, but not to little.

That happened to me. I was over. You know, my forties, I was four hours of sleep at night because, you know I got lots to do. I'm coaching kids and running and doing triathlons and endurance sports and, four, hours to sleep.

Lots of training, lots of work. And, run my lab panel to see how healthy I am. Here I have Hashimoto's and blood sugar issues. I mean, I'm doing everything right, but I didn't take a step back and look like the one of the most important fitness factors I talk about is foundational, sleep fitness.

I wasn't allowing for recovery. Just that lack of recovery and respiratory fitness is another one. So it's not sleeping much. And when I am sleeping, because I have lots of broken noses from activities, sports and stuff, don't have great nasal breathing.

Oral breathing. You oral breathe, reduce oxygen transport, and you change your microbiome. The change in your oral microbiom influences nitric oxide production, influences stomach acid production.

And it's just a cascade of issues. Then you're like, huh, even though we might say I do everything right, unless you are assessing these different areas.

So I look at relationship fitness, financial fitness spiritual fitness. Obviously metabolic fitness But emotional fitness, I have 18 categories, and I had patients self-assess those initially at the start.

And now we know, okay, these are the weakest ones, first we start with the foundational ones. Then once we get those geared in and we started improving some habits in those, then every time we meet, we're working on the next fitness factor.

What can we do to improve this?

Fitness Factors, Stress, and Recovery

And emotions, mindset, relationships, even though nobody likes to talk about those things, Many times, they are the primary things that are creating the environment for dysbiosis.

They're creating environment the for inflammation, that creating an environment, for problems. It may not be what the person wants to talk about at the beginning, but ultimately, many times it's their belief process about the relationships, about their work, their finances, and about partner that sets the stage for the metabolic chaos that winds up with immune and autoimmune conditions.

So I have to work through all those. Those are foundation, those are the most important things I think for everybody. While they're working on those, incrementally, then I'm looking at the chemistry and saying, okay, what's the immune system dysregulation?

What's what pattern does this lymphocyte map tell us? Where are the things we need to look at? And we say, Okay, yeah, this is a fungal pattern. We need address the fungus and why it's there.

This is the bacterial pattern, this is a viral pattern, what can we do to kind of regulate the physiology and help support the physiology? Not work against it necessarily, but work with it.

But if we don't address those underlying life stressors, habits, behaviors, it can be hard to get well and stay well. Yeah, that's such an underappreciated point.

I think a lot of people are open to getting rid of toxins, getting of to inflammatory foods, but in getting read of inflammatory people can like work so much better in your life.

If you have toxic relationships, if you people that are not supportive of you, this can create a of stress for your body and this could send you those signals.

what is that doing to your immune system, right? It's suppressing your system's ability to fight those infections, fight Candida, and fight all of the other imbalances.

And it's just like you said, nobody likes to talk about it. Everybody would rather get a pill than work on their emotional health, than really work in their relationship with others, work with their work, with With their financial relationships, I have so many entrepreneurial friends that they don't want to look at their finances at all.

They're really driving themselves and they wonder why they're having health challenges. A lot of times, it's like you are overdoing it. You're trying to overperform.

I've never been an extreme athlete. I have been the opposite where I wish I was one of those people that got depressed when I didn't get exercise, but I'm just like, you know, I am just going to sit around and be perfectly happy ever since I as a little girl.

But I had a lot of clients who were essentially causing their IBS and causing thyroid issues because of over exercise. and they were sabotaging themselves.

They were over-exercising in an effort to lose weight, right? But you'd just be making their thyroid physiology more dysfunctional, and it would be leading them to have more metabolic problems.

Yeah, because if they already have oxidative stress and inflammatory mechanisms going on and downregulate, and now you aggressively exercise to try and lose more weight, your body is not going to burn that fat appropriately anyway, cause it's not favoring beta oxidation in a very efficient manner.

It's favor more carbohydrate metabolism outside the mitochondria. When you exercise, especially if you're aggressively exercising, what are you doing?

You're breaking down tissue. You are breaking tissue in a body that can't really, it's not in regenerative state to begin with. So you are braking tissue down, creating more oxidative stress that you can manage to began with, and now you take two to three days to recover.

Yeah, that's probably a good sign. You're probably overdoing it. It doesn't mean you shouldn't be physically active, but it may mean instead of doing, you know, four CrossFit sessions per week, let's do maybe one and let get out and do some simple, just go for a walk.

Just do light weight, some light training so that you have a little bit of the mix. fix your mind like, hey, I'm doing something, but not overtaxing the system.

And then you can start into that recovery process and then, you build up and you get back to maybe where you once were or where do you think you want to be.

But I'll tell you, sometimes the patients that I know have more emotional and mindset related things, relationship related, things with the people many times that have been to four, five, six, 10 functional medicine practitioners.

And those are the ones where the red light goes on in my brain. It goes ding, ding ding. I know that practitioner, they do fantastic work. This person's not, They've seen all these things.

They did 27 gut protocols, ten detox protocols. It's less about the system, it's more about what's driving it. And the elephant oftentimes in the room is they hate their job, they don't like their partner, their unhappy, if they're unhappy with theirself, or unhappy at something, and until they change that, either change the situation or change their perception of the situations, which is the easiest, I don' wanna say easy, but that's a choice, right?

But if they can change their perception or change the situation, that's when we see things people go. Probably in the last couple months, I've had a number of women that I have been taking care of who were struggling.

And then all of a sudden, everything's better. I got on the phone one day, we're on a Zoom call with a woman one and I'm like, hey, where's your spouse?

She's like we are getting divorced. She's like, yeah, I feel so good. And I'm looking at her symptom tracker from the last visit to this visit. I was like she's 80% better, her symptoms.

What happened? She goes, after our last call I realized it was him. But you guys seem like you get along. He's on every call. You guys are laughing and joking on the call and he seems so supportive.

She says, And that was creating problems. As soon as I made that decision, it was like a cloud lifted. I felt so much better and I've felt better week after week since then.

And I'm like, holy cow, right? But am I cheering for a divorce? No, I am not cheering a for divorce. But if that really was the biggest driver, you know, creating the problem, all the gut protocols in the world are only temporary.

That makes so much sense and kind of a funny review I got. It was like a negative. Kind of a funny review, I got it with like a negative review of my first book.

And a woman wrote in that she goes, "I didn't have to do any of those things. I just had to leave my toxic job." And that's what got her better. It wasn't necessarily working on nutrient status, on her diet, her stress response or chronic infections, so on and so forth.

That outlined all of these research-based things that can cause a person to have thyroid disease. But for her, it was her super toxic boss and her Super Toxic job.

And of course, some people it's going to be a combination of things, right? It's not necessarily just like one thing, but I always laugh at that one review because she was like, I didn't have to do any of that.

It was just this. For some, people that's absolutely something in their personal life that is going on, Absolutely. And you just don't know who those people are, even at the start.

I mean, you could have somebody, sometimes you got a clue, especially when I see a lot, they've been through a lotta clinicians and nobody's, nobody is helping, right?

Or I'm sensitive to everything. Or, I can't take anything, okay. We're probably up against somebody who's got lot of emotional limbic system wind up that we need to address.

But sometimes people, you just wouldn't know, but sometimes it just takes time to really work on them and say, okay, what are we missing? What are missing, and they finally get to a point where they realize whether the conscious or subconscious thoughts about something in their environment, people person, job, finances, is the driving force.

When you're talking about your friends that are entrepreneurs, When you're an entrepreneur and you put all your sweat, equity in and money going in, and the money's getting thin, you can say, I'm not worried about it, but guaranteed in the back of your brain, your is still going, do I have enough money?

Do I enough fun? And that too, it creates a fear response and winds up the limbic system. And it's going to down-regulate all these parasympathetic systems that make us feel wonderful.

It makes so much sense. Now, therapy exercises or therapies that you recommend for people? Because I know sometimes it's easy for me to look at somebody and be like, oh, your husband's not supportive.

You should leave him or you should work on this issue. But it actually does take specialized work to do it. How do you help people I give people a list of different strategies that they can, here's an option, map method, NMDR, like a bunch of things.

Back in the day, we did neurofeedback in my office, and that was really, really well. There's BrainTap, which is out there now that you can help kind of make some changes.

One of the devices I like right now, because of that relative inexpensive cost, is this kind Apollo neuro bracelet. That thing, for some people, that is a huge thing that helps kind of rewire their brain physiology and makes them feel so much better.

I'm not the person saying, hey, you need to get a divorce. But I wanna, if I get an inkling that that's going on, I'll give them, especially when I have them fill out their emotional fitness and relational fitness questionnaires, Hey, here's the quote where you scored poorly.

Here's strategies that go with that question. Check, try all of these. Somebody not me, go do a math method session and go, that ain't for me. Okay, well here is another one.

I don't like that one, okay. Try this one. Hey, I'm just gonna do heart math work, right? I gonna heart and do it every day, and I feel more at calm, more peace.

I dunno why it's working, but it working. Fantastic. Anything we can do, there's lots of things, But there are some really inexpensive ways to really work on it on a regular basis.

And it just takes work. But sometimes they need, There's many patients I've sent to different practitioners to do some work math method or something else, And they come back like, That was it.

I mean, I'm so much better. Like, yeah. And it's really, a lot of times it sounds like too simple, but once you know what's creating the stress, like your belief, what the belief process is, and you start to work strategies to, work on it, it really isn't about the situation.

It's never the, situation it's our interpretation of the. Situation, right? We saw that through COVID, some people on COVID and the fear and all the fearmongering and everything that's going on, they bottle themselves up and just worried, worried.

And then you saw other people that blossomed during COVID. They made great businesses, their family got closer together, they made lots of money and became financially free.

Why? Because they just saw, hey, this is a bad situation. It doesn't mean the situation was any better, but instead of looking at it, This is bad a situation, I'm going to struggle, and this terrible.

This a good situation? How can I use this to better myself? And I think that's the most important thing is, anytime there's a bad thing that happens. A lot of times people are like, oh, you're telling me I should get rid of, nothing bad should happen in my life.

No, lots of bad things are going to happen. Every day something bad happens, but you can have your pity party. Everybody's entitled to their pity part.

But at some point, we're either going focus on the problem and you'll probably going get worse, or you are gonna focus a solution.

Therapies for Nervous System and Emotional Stress

This terrible thing happened, What can I do to grow from that experience? And that's how I tend to look at it. That's what I try and coach my clients is like, yeah, your husband left you.

It sucks. But look, at the bright side, you guys probably had a bad relationship. He's running off. he wasn't going to be faithful anyway, he was already running.

Now you have the opportunity to find somebody who's maybe a really much better fit for you for the rest of your life. So now that you see an opportunity, if you're focused on the negative, you can never see the opportunity.

But if your solution focused, even when there's a bad thing, and you go, oh, but here's another opportunity here, here is another Yeah, it's interesting how a lot of us went through the pandemic.

I know I'm an extrovert. So I was like, this is really hard. And my husband's an introvert and he was, like this was amazing. Like I don't have to, you mean, I didn't like interact with people.

This is great. It's just being able to find that. What can you do in this situation? Sometimes if we feel helpless, that alone can be extremely stressful and that can drive that awful physiology that none of us want to get stuck in.

But if we try to find how to make the best of a situation, and of course there's going to be situations where we absolutely are going be devastated, we might have a loss in the family, um you know just a really big burden in the family that are in our personal lives that occurs but if we can somehow figure out a way and see the silver lining or maybe get through a challenging time with some specialized therapy EMDR neurofeedback are two of my favorites as well then that can really help us prevent that breakdown of your body going into that deep stress mode, that response where it's essentially breaking itself down instead of rebuilding itself.

And I think too, if I can add to it, is that if you're used to focusing on the problem, it is not like you are going to be like, I'm solution focused tomorrow.

This is going be exercising. You're going have to have be aware of what's going on in your brain and your mind. Then you have actively have say, okay, i'm problem focused.

and work on it. It's a skill that you have to get. Most people are like, those negative thoughts and those feelings, that's how they programmed their brain for so long.

And you're going to have work. Like, it's going take work, not like it is a switch. But if you work on it and you're aware, what am I thinking about? What am i focusing on?

And be aware and then do the work to say, okay, but what's the positive way I can look at this? Good could come from this. What are the possibilities that can come?

From this, you can start to get your mind to kind of make. Make the flip make the change and many people. they get stuck in their uncomfortableness. They're comfortable with their uncomfortableness, so they're afraid to go out and make new changes, because they don't know what's going to happen.

So I'll stay in this relationship, cause I don' know, what else is out there, even though it's uncomfortable. And that continues to contribute to the stress response on their physiology.

That makes so much sense. I'm curious, we do see that the rates of hypothyroidism and Hashimoto's are going up. with times that there's no denying that.

What do you think is the cause behind that? Excessive stress level. Yeah, I think it's just excessive stress. And I would argue they say that the number is like 10% of the population has a thyroid condition.

maybe 13% women makes like 8% men or something like that. I call BS on that, I think the actual number of people have tissue and cellular hypothyroidism going on.

They may not have thyroiditis going yet, they may have glandular dysfunction yet. But I would argue that almost everybody with glucose resistance has a level of cellular hyperthyroid.

Everybody who's got a weight issue has level cellular tissue hyperthroid going. They have the cellular hypothyroid state going on. That's why they have signs and symptoms.

While they may look like they're hypathyroid, their TSH is still normal. The thyroid gland is They only run TSH and a free T4. They, whole bunch of people who have chronic, they have blood pressure issues, They have statin issues.

Almost everybody's got elevated cholesterol, has a thyroid conversion issue. So I think the numbers probably closer to what the obesity numbers are. Probably 50% of the people have thyroid.

That does not mean everybody needs thyroid hormone. Let me make sure I say that. That means that they're in the process. Hypothyroidism is a spectrum disorder, in my opinion.

It's not an on or off. Yes, if somebody irradiated your gland or cut it out, yeah, you got hypothyroids. You're going to need medication. But for the vast majority of people, it starts out with low-grade cell stress inflammatory mechanisms going on, mild downregulation of conversion, mile raises of lipid levels, my blood sugar resistance.

and it becomes a cascade. And over time, we then see the glandular dysfunction because the immune system is creating the damage to the glan. But it doesn't start when you get diagnosed with a glandula problem.

Most people have had hypothyroid physiology for weeks, months, or decades before they actually get an official diagnosis. It's the excessive stress load over It's really interesting because I feel like endocrinologists just hopefully focus on that TSH and if you're hypothyroid, right?

But there's also other driving factors where a person can experience every thyroid symptom in the book, but that their labs might look normal. Can you explain some of those different categories where maybe some of the different names or concepts for the types of thyroid problems.

I guess maybe like non-thyroid or thyroid illness is one of those terms used. What do you kind of use to describe those pathways? Yeah, there's lots of names.

There's primary hypothyroidism, secondary hypathyroid, like a pituitary suppression, which would be more of that secondary.

Why Thyroid Disease Is Rising

Um, nonthyroidal illness syndrome or Tacticus. I think those are all, it's too much, right? So I break it down for my clients. You've got cellular tissue hypothyroidism going on, which means you're not converting T4 to T3 optimally in some of the cells and tissues of your body.

That's resulting in hypothermic signs and symptoms, but you have a perfectly functioning gland at this point. Then you can have glandular hypothyrism.

If you have glandular hypothyroidism, you're going to have hypothyrism in the cell level, right? Because if there's not enough being produced by the gland, there is not going be enough of the tissue.

So I try and keep it super simple for patients that you've a tissue or cellular hypothermia is going on. It's your glands fine. You may or may not have an immune issue going on yet at the gland, but you definitely have thyroid signaling issues.

You're in what I call thyroid allostasis, altered thyroid physiology. Some tissues may be hyper and hypo. some hyper, some hypro, depending on what's going in your physiology, so you can have both mixed symptoms at same time, even though you have a normal TSH.

But When we kind of get it very simple like that, I think it makes it easier to understand. You have a gland issue, they replaced what your gland was making, but you still have cell hypothyroidism going on because of the inflammatory mechanism.

So we need to focus on the inflammatory piece so we can fix the cellular piece. And I try and keep it that simple.

But we could talk about subclinical, all those things, right?

But I'd think to keep really simple for people, is it your glands that's an issue? what's damaging the gland or is it the conversion issue at a tissue level issue or do you have both?

And most people, they've got both. Yeah. And that makes sense. I was going to say, and a lot of people they do have, both, right? They don't just have one or the other.

So it doesn't, it's not this or that. Sometimes it is this and that and we do need to address both things. The person who goes to the endocrinologist gets put on T4 and they feel fantastic and everything goes back to normal.

They probably don t have cellular hypothyroidism going on. or they'd still be symptomatic. The people who are in purgatory after getting medication, they're going from physician to physician, to figure out what's the magical dose of T4?

What's magical does of the T3? what is the magic dose? If I can just figure that magic does, everything gets better. Those are the people, who still have inflammatory cell stress mechanisms going on, and persistent tissue hypothyroidism going.

Yeah, it's really fascinating because I think, you know, the people that come and seek out our help, read our books and go to our websites or come see us.

They're not necessarily the People that are getting better with T4. So a lot of times we have to look a little deeper and figure out what's driving these pathways and why are you not feeling well and we really have the peel back the layers.

And so I really appreciate you coming on the show and taking the time to explain this so well to us. Before we dive into our rapid fire questions section, can you tell us where people can find you and connect with you?

And also the name of your book and then where can people find that? So my website is drericbalcavage.com. Um, so then go there, learn about me if they're interested in a discovery call, they can schedule for discovery.

Call there. My book is called the thyroid debacle. I wrote it with my friend. Dr. Kelly. And that book is really talking about just this new way to look at thyroid physiology through this lens of the cell stress response and adaptive physiology.

And, um, that is not the book that some people are hoping it is when they get it, unfortunately, because I, even my colleagues were like, but where's all the supplemental strategies?

I'm like. because I didn't put any in, because you know what happens when somebody gets a book, they go to the answers page, like, which supplements do I take?

And then they wind up in your office on 30 different bottles of supplements and they're like nothing worked, right? Because that's not the answer. So the book is focused on initially, Kelly really, cause she's a recovering medical physician.

She really kind of talked about, hey, this is how allopathic medicine does it. And here's the pros and cons and then. The 2nd, part of the book is all about this functional model and the science behind it.

I don't I think we have 3 or 400 references in the Book to kind of back everything up. If I redo the book, it'll be 18 fitness factors, maybe more at that point in time.

But I didn't want people to be focused on supplements, supplement, supplements. A lot of times, what else can I take, take take? And instead, I wanted to put the focus on where I think the focused should be, which is what's happening in my diet, my lifestyle, and my environment that I can change that can improve my health and well-

being.

So that's why I put The Focus. The book's called The Thyroid Debacle. I have a podcast called ThyroDentist Podcast. It's like nine years now. You'll be on it soon and we'll have, I'm sure, a fantastic discussion.

And that's available where anybody gets those. I guess I was never a social media guy until a couple of years ago. Now I put out my Thybert Thursday videos, which are more educational, trying to explain to you, okay, this is why things happen, like more sciency.

So I think my team posts most of my stuff on Instagram. Okay, fantastic. We'll tag you on Instagram when this episode comes out too. So and we'll make sure that we write down all of the social profiles and your website and a link to your book in our show notes.

Are you ready for the rapid fire questions? Okay. Optimal ranges versus health ranges. What do you have to say about those? Obvious. And I did this too.

We said allopathic medicine has these lab ranges, they're too wide, it hides a lot of things. So we came up with narrower ranges and said, this is probably more optimal.

It's kind of more to the midline of where we should be. Instead of two standard deviations away from the middle line, maybe we're half a standard deviation or one.

Thyroid Categories and Recovery Approach

The problem is we then said we have to force values into a lab range, into the optimal range for something to be optimal. Lab ranges are never the problem.

lab ranges tell us a story. So we shouldn't be forcing them into range per setting. What we should be doing is interpreting them. If TSH is outside the optimum range we ask why?

not try and manipulate it into range. So people are like, well, my TSH is in between one and two. Well, it shouldn't be. You're a 75-year-old person. Your TSh is probably going to need to be higher so that you can drive more T4 and more t3 production.

your T-4 to T3 conversion is a little reduced due to your age and inflammatory processes. Tsh staying a bit higher in the three and a half, four range is driving more to three production properly from your thyroid gland to compensate for the lack of T four to t three conversion.

The labs are not the problem. What we don't do well many times is we read lab ranges for high or low instead of interpreting them for, is the lab value appropriate?

Normal and appropriate. Is it normal and inappropriate for my patient? Is abnormal and totally appropriate for patient or abnormal or inappropriate from a patient.

And the labs tell the story, but they aren't the stories. Thank you so much for sharing that. Okay, another one for you is, does everybody with low T3 on a lab test need to go on T-3 medication?

No, easy, no. If you want to expand, I'll expand. So if you had, my opinion on t-three therapy is this, if your fully replacing what a thyroid gland would normally make, you should probably take five to 10 micrograms of T three, probably in split dose, so that you even out the highs and lows.

If you're fully replacing the T4 and you are taking the healthy thyroid gland and still have low T3-T4 conversion, check the genetics, see if there's a genetic piece to it.

Other than that, interpret the rest of the labs for the why. Is your T-3 uptake? low and maybe that's you're not you

don't have enough free hormone that is available to be converted.

Do you have inflammatory mechanisms? So before we rush to give somebody T3 just to potentially make them feel good short term, we need to consider what's the long term ramification of ramping up that T-3.

Because remember if you start taking T 3, what is going to happen to TSH? and it's gonna suppress it. So if you suppress the TSH and you're not fully replacing T4, what are you gonna do?

You're gonna deplete T-4. Now you have less T 4 in circulation that lasts what, seven days. You have T four, T three lasts, we can argue 12 to 24 hours maybe, half life.

Yeah, you are gonna want it to slippery slopes. I'm very cautious with T3. We probably don't have enough time, but we could go into all of the reasons why it could potentially be problematic, create more oxidative stress, prevent cellular destruction, leave abnormal cells growing.

There's so much to go through there, but we'll keep it simple, because it's supposed to be rapid. I'm a long talker. Low ferritin. Does it equal iron deficiency?

No. And I know this. A lot of people think that ferretin levels need to in a certain range. We can argue about what the number is. I don't think it should be above 50 in a healthy person.

But if you wanna really determine is a person iron deficient, you can't do it by just a low ferritin on and on. You have to look at the whole iron panel, and you have look the red blood cell panel.

And if really think that there's iron deficiency, then you'd run a soluble transferrin receptor test. If that's high, yes, they are iron-deficient. if they aren't, if have low or normal soluable transferrine receptor, those cells aren' putting receptors out to gobble more iron.

Even though most people say that the iron deficiency is the primary cause, I would argue that anemia of chronic inflammation is a number one cause of low iron, and it could be low-iron and low ferritin.

In some people, many times it's low, high ferretin, but I caution against supplemental iron because of the impact it can have on the microbiome. and on the physiology in general.

Remember, anytime there's inflammation, you have a molecule called hapsidin that regulates iron transport. And so as soon as the body senses danger, what's it doing?

It's hiding iron because organisms use it, we use, they use. So we sequester iron. Especially if you're a dude and you got low iron, low ferritin, uh, Because we don't have good ways to get rid of iron out of the system.

So a female, maybe better, more likelihood if they have heavy bleeding all the time. But there are some iron scientists that say it's nearly impossible to be iron deficient.

It can happen, especially in women, because they may be bleeding regularly every month if their healthy. I don't think the idea of driving ferritin into the 80, 90, 100 range makes a lot of physiologic sense.

Yeah, that's an interesting take. My husband, I've had a history of anemia and low ferretin and all of that. Can we just balance each other out somehow?

The baby may be balanced out. Who knows, right? But yeah, I mean, somebody can have that pattern. But I think before we do the iron piece, like if you run a soluble transparent receptor test, if the cells are truly anemic, they're going to put receptors out and you'll be like, okay, this is the person who needs iron.

They're not getting it. Now, it's not as simple as giving them iron, Why are they iron deficient? Do they have low stomach acid? They're not absorbing it.

Are they not eating the appropriate foods? do they? Have gut dysfunction going on? Did they, have permeability issues? I mean, from a functional medicine standpoint, that those are all the things that start, we should go through our minds when we see somebody who looks like they may have an anemia pattern, but we need to be, I think we have to have some caution.

Yeah, absolutely. I think it's really important to recognize the patterns versus just giving somebody iron. In my case, it was always heavy menses and it took me a very, very long time to realize that it wasn't normal.

And a lot of times people are not educated about what might be normal, right? And sometimes it could be a progesterone issue or a thyroid issue. The challenge I see sometimes is like, some of the thyroid patients, they're just always on thyroid medications.

Some of thyroid patient always get on iron supplements and then that can really impact their microbiome and that could feed some other pathogenic bacteria and different infections that they might have.

It's definitely really great point that you bring up. I'm going to have to dive deep into soluble transferrin into my next deep dive that I do on an iron and ferritin Check out the work of Douglas Cowell.

Sir Douglas cowell, he's a really nice guy. But he said a lot of work. He's got a paper out there. I think organisms behaving badly or iron behaving. Badly.

There's another paper called Iron Man. She should be called iron person, but there's. A lot. Of really good papers out. That kind of buck. the whole everybody's iron deficient scenario and give the reasons why we have these patterns of chronic iron, what looks like iron deficiency.

But yeah, I think your point was really well taken. I had heavy mentis, and I just thought it was normal, right? But in that situation, the answer isn't iron on its own.

It is, okay, wait a second. What's causing this heavy bleed and how do we address that? Because if we addressed that and you're eating protein-based foods or iron- based foods and you have appropriate stomach acid and the inflammation process goes down, then you won't be as iron deficient, right?

So we have, that's again, we're back to our functional medicine piece. Yeah, We might have to give you some iron if you're truly deficients because you are bleeding heavy, but we can't stop there.

We have then say, what's causing the heavy bleed, Right? Yeah, absolutely. And iron-rich foods, it's like the whole supply and demand. You could be eating a steak a day, but if you're losing that blood, if have gut infections or if your have pathogens that are eating it up or those heavy menses.

So that is, again, just not like everybody should take a pill, right? Okay, next one. I think this one's gonna be a hot take. Is vitamin D the answer?

Wow, I'm on the opposite side of the fence of most of vitamin D discussion. We kind of grew up in functional medicine measuring 25-OHD.

Rapid Fire: Lab Interpretation and Supplements

That's everything that gets measured. But 25 OHD is like T4. It is not the active hormone. 125 vitamin is. And when you dig into the science of 125-Vitamin D, it's what's doing all the work.

And so we measure 25 OHD, and when it's low, we just assume you just need more. But again, have to ask the question, is 25-OHD low because I don't get sun exposure and my skin can't convert cholesterol into vitamin D?

Is the vitamin B low? Because I have enough magnesium to regulate the Vitamin D binding proteins to get the VD to the liver to convert to 25. Is the 25 OHD low because it's going into the adipose tissue?

And from my research and looking at it, vitamin D goes there. We thought it just got stored there, but what vitamin does when it goes in there is it actually converts into 125 vitamin B and makes, there's an argument I think in the science that either makes the fat more fat cells or bigger fat cell.

So we have more room and it helps modify the inflammatory damage because when you start crowding fat cells, that triggers inflammatory mechanisms. So if you put more vitamin D in there, you can make more space to store more stuff.

The other thing we have to consider is, is that 25-OHD getting rapidly converted to 125, the active vitamin to do the work? And does that 125-vitamin D, we know there's a feedback loop that then tells the liver not to make as much 25 OHD?

Or is that 25 vitamin D being down-regulated because of that same mechanism and it's being rapidly deactivated because there's already enough 125 vitamin B.

So 125 Vitamin D does a lot of fantastic things. It helps regulate the immune system. But if it is already elevated, do we want to keep forcing more in and having the body work against it?

And are we trying to force something that the, again, that body doesn't necessarily want? There's an interesting paper That was done. They didn't do this on humans, but they did it on rats for whatever you think about a rat study, right?

I usually look at human studies. But when they knocked out the vitamin D receptor on rat, they couldn't get fat. Interesting. So you take that into consideration.

What is it doing? Could vitamin D not just be stored in the fat cells, but could the vitamin B by the adaptive mechanism to be able to deal with all this extra caloric intake we're taking in under these inflammatory mechanisms where we are already glucose resistant and say, well, I got to do something with it.

And it's going into the adipose tissue to So food for thought there. The other thing we have to consider is that when we had elevated levels of 125 vitamin D, it's not all converted by the kidney, right?

Some of this is by immune cells. And we'd have be concerned sometimes because if your 125 Vitamin D is elevated, 125 vitamin D, what's its job? Its job is to improve, one of the jobs is improve serum levels of calcium, not tissue levels in calcium.

Serum levels are calcium and some of literature shows that when you have excessive 125 Vitamin D it increases calcium absorption into the cells. And you should probably well know some calcium in the cell is good, but too much calcium cell creates what?

Oxidative stress. So in an effort to try and manipulate the immune system with excessive levels of vitamin D, we may actually be creating more oxidative stress.

So I could go on for 10 more minutes, but I know this is rapid fire. That's fascinating. Now, do you actually recommend testing both of these markers and then looking at which one might be off?

I think you got to look at calcium, potentially PTH. You want to at magnesium or BC magnesium. Arguably, they're not fantastic markers with magnesium status, but it's the best we got right now.

Look at 25 and 125 vitamin D. And definitely, if somebody's got elevated 125 Vitamin D and their calcium is still low and they've got oxidative stress, I Think you have to really have some caution.

Thank you so much for sharing that because I feel like sometimes we just look at one part of the physiology, but you've really dug deeper into all of them moving pieces that can contribute.

And in some cases, it might be fine to do a vitamin D supplement or get more sunshine. In other cases it may be the wrong thing to if some of these other markers are off.

Yeah. And they did a study on Hawaiian surfers. I don't know if you've seen that study. These people are out in the sun all the time. They're all vitamin D deficient.

All healthy, but all Vitamin D. 25-OHD deficients. What's going on? I had some, I forget the name of the gals that were on the podcast, we talked about where all this Vitamin-D science came from.

and the comp, the challenges with some of the research that was submitted and what everything is built off of it. And I don't argue that vitamin D has a powerful impact on the immune system and physiology.

I just think we make the argument that, oh, you can't just look at T4. You have to look T3. Well, why are we making the arguments that the active vitamin B doesn't matter either?

Now, I think most of us would agree, T3 and free T-3 matters. It's the active hormone. Why doesn't 125 vitamin D matter to anybody? Because it's very simple to just say that's low, give more.

And I don't think it is that simple. If we think about the foods, most foods are not very high in vitamin So is that the way, so did nature intend us to not get most of our vitamin D supplement from food?

If it was, I think we'd have more vitamin B, but where do we see the highest content of vitamin DNA foods in cold water fish? Why? Because those are probably places where people don't get as much sun exposure.

So I think we have to have some caution. It's not that I don't use it, but I also am concerned about the ratio of vitamin A to vitamin D in the body. Vitamin A, critically important to cellular signaling.

And if we're just loading up with vitamin B, are we disrupting that normal balance of Vitamin D especially if you're taking it orally and supplementally?

Maybe. It's really fascinating. And I, you know, I could tell that you've worked with some really complex clients because you really dug into these physiologies because sometimes people just scratch the surface with even functional medicine, right?

And some of the functional medicines labs, but sometimes you have to look underneath the surfaces. Okay. Is Hashimoto's defined by positive antibodies?

I've run probably close to a hundred lymphocyte maps. And the vast majority of people with Hashimoto's are TH1, TH17, or CD8 dominant, not TH2 dominant.

So the literature is pretty clear on this. Thyroid antibodies don't create that much damage. thyroidoglobulin antibodies, don' t cause any damage based on the literature and TPO causes very little damage, most of the damage is caused by CDH cells, T1 or TH 17 cells.

They release inflammatory cytokines, they release cranial enzymes and other Malik and other hormones that create cell damage, but that's what's creating the majority of it.

So they say that small percentage of people are zero negative. I think the reason they. Which means for the listener that you don't have positive antibiotics.

The reason they say that, that small percentage is because nobody's doing lymphocyte panels. Nobody's measuring TH1, TH17, CD8 cells, natural killer cell activity.

No one is measuring that when they're doing it. They're just saying, yeah, your TSH is high, you're free T4 is low, and your antibodies are negative, therefore you don't have Hashimoto's.

That's not true. Thyroiditis. If you have thyroiditis, if you had inflammatory damage to your thyroid gland, then that is Hashimotus. The only difference we get is antibodies, it's Hashimoto's, if it is not antibodies it isn't Hashimoto's.

I think all that's BS. It's all immune driven. You'll see with some of the people who are TH1 or TH17 dominant, low TH2, as they actually start to get better, they may actually have antibodies but that doesn't mean there's more destruction.

That just means the immune system is starting to balance itself back out. And so I think in seeing antibodies, you could say there's probably thyroiditis going on, but you can't say that somebody doesn't have Hashimoto's just because they don't positive antibodies.

Yeah, that makes so much sense. I know that people have gone through fine needle aspiration for biopsies and they were able to find evidence of Hashimoto's that way or thyroid ultrasounds, even when they are seronegative or antibody negative.

And so I think that's a really good point. That's why I the Cyrus's lymphocyte map is, to me, since almost every person that we see has an immune disorder, In my practice, almost everybody's got immune disorder.

And so that test helps us identify, yes, there's an immune-driven disorder, this is the pattern, This is likely triggers that are doing it, and here's where we have to go.

This the Cyrex lymphocyte test, is that right? Yeah, it's called Cyrax Lymphocybe Map Immunotyping Test, but lymph map is this short version, yep. Okay, we'll go ahead and add that to the show notes if people wanted to learn more about that.

Yeah, so I think it's critical test for somebody who's got it because it really. Once you really once you start to run a bunch of these things and start see, and I didn't understand the patterns when that test came out, I, think was like, 3 years ago came up during cobit.

And Dr came with that task. I had him on the podcast. We did like 3 to 3 hours on. The podcast and 45 minutes before the. But. In the beginning, I was like, okay, what do we do with this?

But then once you really start doing it, and then I'm a little bit of a nerd and doing the research, Okay, What elevates TH17? What would drive these things?

Man, it really helps you understand that, man, this person's TH2 dominant. That's why this is probably an emotional stress pattern. This is why their antibodies are so high.

They have the histamine response. When they take the T4, they get even more brain fog, more histamines response because they're already TH2 dominant. Probably want to really minimize what we're doing from a thyroid hormone perspective in some cases.

The other thing that you can learn from that is T3 medication, when we give it We can see changes in the lymphocyte pattern because of the T3. Like we can, you'll see sometimes some of natural killer cells get tanked on people on high dose T 3. What does that mean?

Natural killer cell are like the mall cop. They're looking at every cell saying, is that good? Is that bad? is there something in there? If you suppress those, You may make somebody more susceptible to chronic cellular infections.

So I've run it on, people high, low as they come off of it and see what happens with changes. I think it's a really critical test. What a fantastic test, I'm definitely going to have to check that out because that can really potentially even eliminate the need for additional tests because then it gives you the patterns.

Yeah, you can see the pattern then if you want to, this looks like a fungal pattern and the patient has signs and

symptoms and you go after them. If you need to then you could do their, they came out with a brand new biome burden panel where you now look at the fungoreactivity to food fold mold.

to different types of candida, candidal toxins, or virulence factors, to food-based molds, anaerobic, aerobic bacteria. So a really nice test they just came out with in the last couple of months.

Or if it looks like a viral panel, you run a viral panel. If it's looks a bacterial pattern, run array 12 and look at everything. Okay, fantastic. Thank you so much for that.

I'm definitely going to have to add that to my repertoire of tools. Is TSH above 2 always problematic? No. In my model, thyroid recovery model. When we're trying to get the thyroid gland to recover, you do not wanna keep it suppressed.

If you keep TSH down in a one to two range and you're tryin' to recovery your thyroid glands, your thyroglans not gonna get enough stimulation to recovering.

So I have no fear of somebody being in the four, in five, if I'm working on a thyroid recovery. They have enough T4 in this system. Then I want to go up because what does that do?

It tells the thyroid gland to make worth our hormone. So we don't want somebody having a high and not have thyroid hormone, right? But we can't.

Hashimoto's, Lymphocyte Mapping, and Recovery

If you want. Lab management, allopathic medicine does lab management. Some people in functional medicine, integrated medicine do lab-management. I do thyroid recovery.

The thyroid-recovery, not only do I want somebody to recover their conversion of T4 to T3, but I them to recovery their thyroid gland function. And some people say a gland can't recover once it's destroyed.

That's not true in my world. 30 years of doing this, I've had plenty of people, been hypothyroid on medication for 20 years, and they have full function back, no thyroid hormone, converts well, not problem.

So not everybody has a gland that can recover. But what we can see, and I've got patients that I have been working with for five, 10 years where it's been slow and steady, that thyroid gland has continued to cover.

Some people faster, they're off medication because I think Maybe 70% of the population is probably on thyroid. This is gonna be, people are gonna hate this, but I think about 70%, the people on thyroid medication were probably in it inappropriately from my model because they're trying to manage a TSH or manage T4 or manager T3.

And in my bottle, if they need, I want somebody to make sure, is there enough T-4 in the system so that if your body wanted to convert it, it could, by it's converting to reverse T three.

I got enough to T four. If I have enough, T for, As long as T3 is not really, really low, then my job with that patient, because they want recovery, is to say, you got enough T4.

We're not afraid of TSH. we're going to monitor it. Not ignoring it, but we want, we are going monitor and see how we do. If TSh is, if they reduce their medication dose and Tsh goes up, But T4 is still good.

T3 is a little bit low. That TSH is trying to drive more production. So I'm not overly concerned about it. I don't think we should be that concerned. It's also age dependent.

We know that. Age determines the rate, kind of the range. And we also know that TSH can be influenced by medication. TSh can influence by the time of year that the blood is drawn, actually.

So winter months versus summer months, Tsh can fluctuate. I think we have to be aware of every number, because the numbers tell a story, but we shouldn't be so focused on manipulating it.

So as you're working with people with all the underlying issues, you actually want to see a TSH being slightly higher so that that could drive that T4 production but it would be like a transitionary elevation and then eventually it will come into homeostasis unless of course the person was like 70, 80, 90 years old, right?

Yeah, and I have this discussion with prescribing physicians all the time. We'll have a conversation like their TSH is six, we got to get more. I'm like, what's their total T4?

Nine. Okay, they have enough T four in the system. What's the free T for? 1.6. They have an Ft4. they're not converting it. So if you give them more T 4 to lower the Tsh, you're going to increase the reverse T3, You're gonna decrease the t3.

And if they don't believe me, I'll like great, put them on more t4, let's recheck them in 30 days and see what happens. That's exactly what I said. TSH went down, T4 went Down, t4 to t3 conversion went, down reverse t 3 went up.

Did we help them? No, because they don't feel any better. So it's not that we don' t pay attention to the number, but the goal is recovery. then you can't be suppressing TSH because TSh is what drives iodine into the tissue, drives micronutrients into tissue drives production.

So if you want your gland to try and recover, you cant keep it suppressed too low. In my experience, it's like children and then women with postpartum thyroiditis that have been some of the easiest clients to recover thyroid function.

Do you have any other clients where you feel like, okay, this is obviously thyroidectomy clients. not going to pursue that, right? They do need to be on thyroid hormone.

Do you have like client characteristics where you're like, okay, we can probably get your thyroid function recovered? I assume I can do it with almost everybody.

I've been doing this 30 years and the average, my average client in six months We've got about 71% improvement of signs and symptoms, and almost every person has to reduce or eliminate thyroid medication during the timeframe.

Now, not everybody's better in six months. Some of those people, they went from 100 to 54 micrograms to 32 micro grams, some people are slower in that process, but there's probably not a person that I've worked with that hasn't had to reduced their hormone proof.

medication. Even when we work on just working on somebody's gut and their GI tract, you often have to reduce the medication dose because they're absorbing more of it and it's more effective.

But yeah, I see people recover on a daily basis, their physiology. To me, what that means is thyroid recovery means that you have improved Conversion of T4 to T3, you have more cellular homeostasis, more homeostatic regulation versus allostatic regulation.

It may mean that you still need thyroid medication, but it works appropriately, right? Your cholesterol is back to normal, your glucose resistance is better, Your signs and symptoms have improved.

Your hormones regulate better. That means that's still recovery. But even the thyroidectomy patient, I have a patient on medication, thyrodectomy, we're working with her, and even as we are working on her we have to keep decreasing the amount of medication.

I'm like, something's up here. So she had to go back and get another scan done and see what the heck is going on.

half the thyroid gland had grown back.

Now the physician was automatically like, we're taking it back out. And she's like we are not taking this thing back, out we gonna monitor it. It's been four or five years and she still on half of the medication that she started on and everything else is working fantastic.

Wow. So she had a total thyroidectomy and half of her thyroid tissue grew back. Yeah. They don't always get all of the tissue out of there. There's some residual, but I think because of we've reduced the immune inflammatory process, we didn't suppress TSH under one, right?

Like we did and do the things that were typically being done. And because what would happen sometimes with patients You start to know the patients are in this, I call it the stall.

Like if you're doing a brisket, briskets stalls and its temperature doesn't change and you know, like six hours, you are still there. But when somebody is doing well with the processes that we typically use and they all of a sudden they were getting better, getting and then they stall or then I start say I'm getting more histamine symptoms.

I got more brain fog. They got irritability. Got more insomnia. That's usually a clue right away that we have to go get those labs checked because now that the T4 dose is probably too much and it's creating hypothyroid symptoms again because too many TSH or too T-4, too too thyroid hormone in the system suppresses T SH too.

It also reduces D-idenase conversion, T 4 to T 3 conversion. So they'll start to get the hypathyroid systems again. I call it the stall. You run their panel, you're like, yep, your T S H is suppressed again, conversions down, reduce the dose.

Come check them in 30 days later. Yep, TSH is back where we need to be. T4 is even better, t3 conversion is better. You just need reduce the dose. That's fascinating that there's even hope for thyroid tissue growing back.

So thank you so much for sharing that. And then, of course, it's not an overnight process. It's nothing where you would be like, just throw your thyroid medicine in the trash.

We do need to make sure that you do address the different factors. You mentioned there are 18 different things that are going to be looking at with thyroid patients to really get them in that optimal state when their body can regenerate and heal itself.

Yeah, absolutely. That's incredible. So I'm super, super excited about all of the innovative work that you're doing for thyroid patients. Thank you so much for taking time out of your schedule to have this conversation.

I hope everybody listening, this has been healing on your journey.