When an Endocrinologist Becomes the Patient: The Gut-Hormone Connection Transcript

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Introduction to Gut Health and Symptoms

Symptoms are little gifts from God. Like if you just ignore all these symptoms and nobody's checking your blood work, guess what? You're eventually gonna get a disease and they're gonna a medication and you're still not gonna figure out.

So that's kind of where the emphasis with the book came was really teaching people why is our gut so important? What happens there? And this is where we should actually start.

You're listening to the Lifestyle Medicine podcast with Dr. Ivan Rusilko, brought to you by Access Lab, where we explore new perspectives at the forefront of personalized health care.

Welcome to the Lifestyle Medicine Podcast. I'm Dr. Ivan Rosilko, your host, and we're powered by Access Labs. If your doctor's not checking your labs, they're not a doctor.

And today we are talking about the gut hormone connection with Dr Cassie. Again, she's a double border certified endocrinologist who has a wealth of knowledge.

She is a recovering traditional medicine physician. So Dr Casse, thank you so much for stopping by today. Yeah, thanks for having me, Dr. Ivan. It's true.

Recovery, traditional medicine, internal medicine endocrinologist. But thankfully I've been out of that for about four years now and people are getting better because I check their lab work and we talk about lifestyle medicine.

That's kind of where to go with it. Can you kind give us a thing? I know we kind chatted before this. You said you've kind experienced something else, Hashimoto's and things like that that kind push you more into this actual industry than you were in the actual traditional aspect.

Yeah, so I actually got Graves disease, which is an autoimmune process where your body overproduces thyroid hormone in residency at medical school, kind of medical into residency.

And if you've ever maybe had too much caffeine or been really sick where you feel like your heart's beating out of your chest, you know, your shaky, or you're super hot.

Imagine having that for a year and also being in residency and trying to put central lines in people.

Dr. Cassie's Thyroid Autoimmune Journey

It wasn't a great experience. When I went to the doctor, there was actually one night I was in the ICU helping to code someone and then put a central line in them.

They came back and their heart rate was like 130. I noticed, well, my heart rates the same. That was pretty wild. I didn't love the medicine. So, in traditional medicine, it's like, oh, you have a diagnosis here.

You fit in this box. Here's the medication that treats it, right? Because that's what we do. We just, Oh, we have the diagnosis. Let's give you a medication.

God forbid we talk to you about anything else. Well, the medications that they gave me didn' t make me feel very good. And so, I did' n't like taking it.

I went back to them and their response was, Okay, well we can just remove your thyroid. And I'm like, well, that's a pretty important organ. I don't think that that is the answer, right?

Okay, you're going to be non-compliant with your medicine. Well, I wasn't noncomplient. It just didn't make me feel well. So let's just remove that organ." And I didn't like that answer either.

And so then the other option is, well, we'll just ablate it with radioactive iodine. Also not my favorite option. So I guess I was the annoying patient who was like, man, there must be something else, and there really wasn't.

I took the medicine, made it through residency the best that I could, although residency is not great to you, so it probably wasn' helping my stress, my cortisol, etc.

And then, thankfully, I went into remission, so I was taking some of the medication, the methamazole. I wanted to remiss, and I'm like, okay, great. And, then lo and behold, you know, starting to get into fellowship, but then I developed Hashimoto's, which is the other end of spectrum.

That's not great, because then you're cold, constipated, your hair is falling out. It's awful. You start gaining weight. And so, again, I went back to the doctor and was like, okay, so now what?

Well, guess what, it was a different medicine that also doesn't make you feel any better because nobody talks to me about my gut or addressed any of the underlying issues.

And, and so I just got really frustrated with my own colleagues and myself because I was in a fellowship program where you learn all about the thyroid, you know, the most you can learn in this country about thyroid disease and there was no answer.

So I started exploring my gut and some different options through functional medicine, doctoring Dallas, and I got off my medicine and then I was like, wow, you know, I believe that you can't unsee things, right?

You can unlearn things. And so then, then knew I doing the wrong thing. So, got out of traditional medicine. Started helping people and it's been a wild ride since then.

No, I love that. I loved it. That's so right. Because again, you sit there and see, traditional medicine is just more about the prolongation of life. Don't let your patient die.

There's nothing about augmentation about how the patient feels or anything like that and you bring up a very good point when it comes to the whole gut aspect of it and I think a lot of physicians kind of brush over that because we don't really pay attention to that, at least where I went to school, we weren't taught about anything when we came to little gut hormone access.

Can you kind since you are a specialist in that, kind of how the gut influences the hormones and then vice versa. Yeah, so this is a thing you don't get taught anywhere in medical school.

And you know this, Dr. Iman, I have a metabolism degree, like an endocrinology, diabetes and metabolism actual certification. When I did my boards, there was like one question about metabolism out of 180. So that's how much we learned about it in Medical School.

But what I will tell you is that you have about 10 times the amount of DNA in your GI tract as you do the rest of your body. So, it's pretty interesting that all that data is there.

The rest of our body, our entire body which we learn about, you know, is so, there's just, its less significant when it comes to the actual chemicals and signals and things that are running our bodies.

Why the Gut Drives Hormones

And so it makes sense when you start to, peel back the onion that if we have all this genetic material contained in our guts, giving our money instructions on how to do things, how metabolize things how, to process things.

it would make sense that we should probably start there, right? In medicine. But that's not what we do. We kind of work, unfortunately, completely backwards in medicine where it's like, here is the disease.

Okay, let's give you a medicine to stop the diseases from getting worse. When really we say, oh my gosh, this is a disease, but let us go back and figure out what caused the And so all of that begins in your gut, which I'm sure you know, because so many things happen there.

Hormones are created there, hormones are activated or turned on there we absorb micronutrients from our gut which is what gives us the building blocks to create muscle and create proteins, amino acids, fuel our mitochondria.

I mean, in addition to that hormones, are converted or activated there like our thyroid hormone. for every cell in your body. Insulin and cortisol are regulated there.

And so there's so many hormone abnormalities that can happen in you gut if your gut is not working correct. Vice versa, if you're hormones aren't working correctly because nobody's testing your blood like you said, or maybe they're not doing a comprehensive panel, like, you guys, allow access to access medical, then That's a problem too, because you can't fix what you cannot see.

And if you're having symptoms, I tell patients this all the time, symptoms are little gifts from God. If you just ignore all these symptoms and nobody's checking your blood work, guess what?

You're still not going to figure out. So that's kind of where the emphasis with the book came was really teaching people, why is our gut so important?

What happens there? And this is where we should actually start. not with a pill or a medication. No, no. I mean, you couldn't be more right. And again, even I was guilty of this when I first started out.

Of course, I thought I doing very well back in 2012. Sit there looking at all the different hormones, all different types of neurotransmitters, this, that, and the other.

Then it wasn't until about 2014, two years later, it was like, there's something I'm missing. You know what I means? And then that's when you kind of start to go back, look at biome.

All kinds of different aspects of what makes you tick. It's actually even called the second brain. which is definitely kind of unique how important the gut can be.

So what's kind your approach when a patient comes to you, whether it's virtually or whether, you know, into your office in Oklahoma City, what is your kind, your methodology of going from A to B when it comes the patient's health?

Yeah, so I think every patient, we do a really in-depth intake with them where we just let them talk, like tell us about your history. as well as what medications you've tried, what symptoms are bothering you currently.

I think gathering all that information is really important because, again, symptoms our little gifts, like your body is giving you signals as to what is wrong.

Also what medication are you on, and what surgeries have you had, etc. And then we take, you know, tell me your top three reasons for being here. Is it that you want to live longer?

Is that that want you to get rid of your brain fog? are you're irritable and your husband's like oh my gosh I'm at my wits ends with you is it your weight is that your sleep I mean you know there's so many things like what are your top three things and then once we have all that information we do extensive blood work actually on all of our patients

so every patient that comes gets probably about 35, 40 markers minimum.

We're looking at cortisol, we're look at insulin, a full thyroid panel, thyroid antibodies, all your hormone levels, inflammatory markers, cholesterol, APOA, I mean this huge panel because we want to tie the symptoms you're having to what is actually going on in your body, but we also want you to know, you know micronutrients is what we want.

You to really be able to see like, okay, You may not even be having symptoms of some of the issues you're having already, or you may have blood work that looks like oh my gosh, it doesn't look like your hypothyroid cassia because you are taking thyroid medicine.

But guess what?

Patient Intake and Comprehensive Lab Testing

That thyroid medicines you taking isn't able go into the cell because your iodine deficient or your selenium deficients or ferrets deficientes or So we really take a comprehensive approach of looking at everything and then piecing that together for patients.

A lot of gut symptoms. You know, you get a lot a gut symptom on the intake as well. What kind of testing do you do for the gut? I'm curious. So now you think it's a good issue.

How do approach that as a physician? Yeah, so that's a great question too. I have done all sorts of gut testing. And what I will tell you is we have kind of settled on a GI map because some of the gut tests out there are very in depth, 40 pages, just stressed you out.

So I used to get these really in-depth stool studies and I would go over this with a patient for two and a half hours and then they would do nothing. Because they were so overwhelmed.

So, right. And so now what we do is we take their blood work, we their symptoms, and we use GI maps, which are a four-page document. We really spend time showing them, like, hey, look, your secretory IgA on your GI map is really low.

Your immune system is not working in your gut. You're calprotectin is high in you're zonulin. you have leaky gut, you've all these bacteria in the gut that aren't supposed to be there or candida or yeast.

Why is that happening? Well, it's happening because you're really stressed out because your cortisol is 30. And when you are stressed, your immune system just stops functioning in your gut.

Now you've got all these opportunistic infections. It's causing your insulin to be high. Oh, also now your progesterone is low because when your cortisone's high, you progeterones low.

But now that your insulins high your estrogen's low, now you T3 is not working. Its not converting. Your thyroid is a mess. You're growth hormone is slow.

So we just kind of show everyone. We just lay out everyone's dirty laundry. Like, here it is. You thought you had three issues, you really have 13. But it's not your fault because you've went to doctors and told them symptoms forever and nobody put all the dots together for you.

So that's what we do. We get all of the tests, we get the information, and we lay out all that data and then we say, okay. this is what we see. This is why we need to start fixing this.

And then what are your top priorities? Let's start working towards those, moving forward and making you feel better. I mean, that's a super, super. Obviously, an endocrinologist is explaining it.

People are just like, okay, it's very in-depth. When it comes to Candida, I do a lot of Candidata tests in my office and it seems like I'm finding more men who have infestations of both the IgA and IgM.

um for that so can you can can kind of touch what what you think candida can do to the gut when it comes to whether it's malabsorption or just overall throwing the old gut biome um into into chaos i mean candita does a lot unfortunately Not only does it throw your gut microbiome into just complete chaos, so you're good bacteria.

You know, one of them, Acromansia, that is so important for insulin regulation and weight, it kills because the Candida will kind of take over the mucus lining of your gun.

Acromancia are very sensitive to mucos. They live in it. So a lot of times they kill our good beneficial bacteria that help maintain our weight. They also allow bad bacteria to come in and set and seed and grow opportunistic bacteria pathogens.

I see a lot of people with, you know, like very interesting parasites that you wouldn't typically see in the US that have candida. But in addition to that, it messes with your immune system because your system knows the candita is not normal.

So it's chronically revved up and trying to fix it. And then over time, It's like, oh my gosh, I'm tired. And so it not only messes with your immune system, mess with you gut, your insulin.

So when you have Candida, I don't care how little you eat, how much you exercise, or how you try to lose weight. It is really difficult to do because it's signaling to your body to make more insulin, and insulin is a storage molecule.

So all of your food is being stored as fat instead of being able to be burned. So they're going to start losing muscle mass. And then that's going make this even worse because muscle is, yeah.

Candida is really terrible. To your point, I see it a lot in people and I think a sad diets, you know, our standard American diet, because yeast eat, they eat carbohydrates and processed sugars.

Candida, Dysbiosis, and Metabolic Disruption

And when that's all you feed your gut, those yeast are going to eat and they're going grow and replicate and our good bacteria and immune system They can't do anything because also the yeast keep our body from absorbing micronutrients, which are good bacteria need, and making butyrate, making neurotransmitters.

Then we're going to end up anxious. We're gonna end depressed. A lot of people with yeast have such bad anxiety. I don't know if you've noticed that. Yeah, it's a, you can't make tryptophan and you get serotonin or dopamine absorbed from your gut and across your blood brain barrier because of the yeast.

So it is a big problem. Yeah. I think a lot of people take it for granted. You know what I mean? Like they say, ah, Candida. It's there no matter what.

Um, so, I definitely think physicians need to test a little bit more of it and more frequently, personally. But when it comes to the gut, do you see any difference between the male anatomy versus the female anatomy?

Is there effects on estrogen versus testosterone, IGF-1, or are we created equal there? No. Women are not little men, despite what your Instagram influencer tells you.

We are NOT. So women have special bacteria in their gut which make up something called the estrobalome, which helps us metabolize our estrogen and our progesterone, our hormones.

And it's really important because we make hormones, thankfully. We make a lot of estrogen. But when we're done with that hormone, we have to clear it.

The way we do it is through bile, through our liver. In order for your liver to detox and clear things in your body, it needs things like methylated B vitamins, It needs flutathione, which we create.

And so in order for that to happen, your liver has to function. You have to have good bile flow. Then once your estrogen has been utilized in your body, recirculated through your livers, excreted into your bile, it is in you feces.

It's in poop. We need to get rid of it. There are certain bacteria in our gut microbiome that help us keep it all packaged up and get it rid off our estrogen.

If you don't have enough of those or you have too much of a different type of bacteria, beta-glucuronidase activity bacteria. Basically, what they do is they go unpackage and put little holes in the bad estrogen that's wrapped up trying to leave.

And we recirculate our estrogen. When that happens, women, our breasts get tender. Right before our period, we're really crampy. We want to kill everyone, including our husband and children.

Our moods are awful. we are super bloated. Then we start our periods and we feel much better. I guess that is just normal period hormones. No, your gut is not working correctly.

So we have certain bacteria in our gut that are crucial for keeping our weight and our hormones metabolizing correctly that men don't necessarily have to have.

Did you see a difference between a woman who's in their puberty type years towards regular versus perimenopausal and then obviously menopause? Are there different gut biomes with that one?

Yes. And unfortunately it's not. It's more complicated. You guys are so complicated! We are. We have three hormones. Yes, because as we lose our hormones, as you lose your estrogen and our progesterone, it affects what bacteria grow in our gut.

So interestingly, Dr. Ivan, I don't think people realize this. When you are in your 30s, your mid 30's, a lot of women have already lost 35% of their estrogen.

By the time we get to 40, most women have lost 75% percent of the progesterone at 40. But we don't go through menopause till we're 50, right? And your doctor's not going to check your levels because I think doctors tell people now, like, I don' need to track that because you're not in menipause or something crazy like that.

I mean, when your progeterrone is low and your estrogen is load, those good beneficial bacteria that live in your body start to die. And so testosterone, estrogen, and progesterone keep certain bacteria alive.

So this is why men have a little bit different bacteria in their gut than women, because you guys have ton of testosterone. You don't have as much estrogen.

Right? As much proestero. Unfortunately, as we age women the bacteria and our gut start to change. Not for the best. Because a lot of you are not getting your labs checked and your hormones balanced appropriately.

And, you know, I like to tell people menopause is something that will happen, God willing. It's a part of aging. And so you do see women who have really bad guts, even in their late 30s, early 40s because they're starting to lose their hormones, because their stressed, their cortisol is high, they have Candida, H.

pylori. it started to affect their hormones. So it changes their microbiome. And then this is just this vicious circle. Now their thyroid hormone isn't converting very well.

They become hypothyroid. Their insulin gets even higher. their yeast grows even more because now they're snacking because they are hungry all the time.

they aren't sleeping well, I mean, it's just a big cycle. So I, but I honestly, now I see girls 19, 20 years old who have terrible guts too, because they're always stressed.

So when their cortisol is high, right? They're stressed, they feel stressed for whatever reason. Their cortisol's high. Now their guts becomes leaky, their secretory IgA gets low, and they get Candida.

Women, Hormones, and the Estrobolome

It's kind of, unfortunately, becoming a problem with all of us. No. So when it comes to that, do you have different, so you obviously, you know, say a woman comes in, Do you different protocols for various ages, or since you're seeing stress across the board, it's kind of women get this, men get, this or, I mean, how do, what's the precision medicine behind that?

We try not to put anyone in a box. I hate that. You know, we try to give everyone a full access, like lab panel, listen to all their symptoms, do a gut study if they're willing to do it.

And then we really try help them figure out what is going on. So I don't necessarily not check a girl's progesterone because she's 19. Actually, I'm more apt to it because when girls are 19, if we have low pro testosterone, you need to get this fixed.

Right now, talking about this in the book, infertility rates getting higher every year. It's kind of scary. It's scary and also PMOS or what was formerly known as PCOS is also rising dramatically as well.

And now we're starting to realize, oh, PMOs is actually a gut issue. It is not a hormone over issue, it's not the stigma of you eat too much, you have insulin resistance, that's your fault.

There's actually different types of PCOs and one of them is adrenally. You know, so adrenal PCOS from stress. One of them is post-pill if you've had birth control, you know So there are all these different things that are tied to PC OS and infertility Which I love this new classification because now it forces people to look for better answers Like is it insulin driven?

Is it cortisol driven is that you now? Did you see people from different parts of the world who have different gut issues? Because again, obviously I can go to Croatia or something and eat pizza all day long and my stomach is great, I lose weight, and I feel good.

You come back to the States and you smell pizza and all of a sudden your skin is bad, you're retaining water. So do you think that has probably the biggest play on your actual gut?

or what would you say that the number one cause of gut dysbiosis or gut issues are? That's a great question and I've thought about this a lot because it's so true.

I'll have people that were running through gut programs in the US and we kind of heal their gut and they're coming towards the end and then they go to Europe and their eating all these crazy things in Europe they could never eat here and there fine and the they come back and are still fine then try to eat it here, and it is a disaster.

We run completely off the train tracks, right? I think it's a combination of things. When you're in Europe, you are probably a little more relaxed, right?

Typically when we're on vacation, we are more relax. And shockingly, when you relax in a parasympathetic state, your body absorbs nutrients better. That's how we supposed to be when eat.

We're not supposed be walking around, talking on the phone, reading our computer, chewing our food, driving. Like all of those things when were in heightened state of awareness makes our gut go, ooh, it is not time to digest food and rest.

part of it is you're probably setting down, enjoying your food, the experience, and enjoying the environment. When we're happy and in a happy state, we have more oxytocin, which I think people forget a lot about oxytoxin.

It's cortisol. Yeah, it's kind of like when you are chronically stressed and you have a lots of cortisol, sometimes that's going to happen. I get it. Well, then let's work on our resilience, which is oxytocin.

Let's do all the things that make our oxytoxin high. Whatever makes you happy, I want you to do. I don't care what it is. Go see the sun. Yeah, I mean, it's so true.

And so I think there's a combination of when we're in other countries, our oxytocin is probably higher, or cortisol is lower, and the quality of their food is much better.

You know, we have a mineral depleted soil problem in this country. We feed animals growth hormone, We spray pesticides all over everything, And somehow, all of that is okay.

to then ingest, right? And then it's okay because then you go to the doctor and you get put on a pharmaceutical drug and the windmill just continues to go.

Yeah, it just keeps going down the line there. No, you couldn't be more right. Well, what are some of the biggest things you use to treat the gut? Are you using peptides?

Using probiotics? You're using specific types of nutraceuticals? I'm curious. Yeah, so it kind of depends on what's going on. But yes, I love oral BPC, KPV for your gut.

It's phenomenal. I absolutely love that. A lot of glutamine, if you have a leaky gut, but also before we talk about like, hey, what are we going to use to treat the gut?

I like to talk like let's stop putting toxic things into the guy. So yes, there are things definitely that can help to calm down the inflammation, to coat the gut.

If you have bacteria or fungus or something we're trying to get rid of, we can do berberine. There's lots of different things that we do, like we call it kill phase, oil of oregano, etc.

Stress, Europe, and Gut Resilience

And so we do do support the gut lining. We do kill phases with supplements. You do a lot of digestion support. Most people don't have enough stomach acid.

They think they have too much because they are heartburn, but they really don' have a enough. There's a baking soda test that you can do that will tell you whether you have an acid or not.

But a little times it's supporting acid in the stomach and digestion through things like digestive enzymes. Things like, you know, something with ox bile if you don have your gallbladder.

I am floored at the millions of Americans who don"t have gall bladder. who are sick every time they have a fatty meal and don't know that they should take things like Oxfile to help them digest that.

And so we talk about that, but just simple things, like, let's sit down, chew our food, be grateful for our foods, and be mindful. We talk to them about sleep, we talked to about stress, so it's a pretty, I would say, a holistic approach.

But the number one thing you can do if you're struggling with gut issues is take evaluation of what you are putting in your mouth. Because if it's toxic, it doesn't matter how much cat's claw, glutamine, digestive enzyme, meditation you do, if you literally just pour garbage into you and toxins, that's not going to fix it.

No, you couldn't be right. So come to that point, do you have a favorite diet? So if somebody comes in, they

obviously have candida or they have dysbiosis, or have something.

Is there a specific, like paleo, Mediterranean, is it ketogenics, carnivores or something that you look air towards or no? Yeah. I mean, I think it depends.

Like obviously with candida diets, it's like you need to be like no sugar, zero sugar. That's what feeds it, right? So it'd be more of like a keto, like zero, sugar zero type of carb diet.

But I'm not saying, there's not a diet that's best for everyone. Honestly, if you said, you hold a gun to my head and said Cassie, what is the best diet for anyone?

Go. It's going to think about what your grandparents ate or think what they ate in the Bible. Its single ingredient, whole foods. Yeah, grown on the earth, period.

If you don't know what's in it, you probably shouldn't eat it. And that's kind of how I like to live my life. You know, like, hey, I'm going to mix these single ingredient foods together and eat.

It's not difficult. I try to tell everybody, if you go to the grocery store, just stay to be outside. So you never go in the middle of the actual aisles, because that is where all the nonsense is, or that.

So good, so we kind of touched on everything with that. Can you touch on the thyroid just a little bit more with the gut? I think you brought up a very good point with peripheral conversion.

So how is that affected by the guy? Yes, as a thyroid, you know, poor thyroid. If you're listening to this, just think about this. In order for your thyroid hormone, and I there are probably 50 million Americans that have hypothyroidism that don't know that are not treated.

I mean, I don' think that that is a low number and not exaggerating. And this is why, I mean, maybe a hundred million, but for your thyroid hormone to actually work appropriately, you get a signal from your brain that says, oh my gosh, or I need thyroid in the form of something called TSH.

That goes to your thyroid and tells your Thyroid to make T4, our thyroid. TSH is very finicky. It produces itself randomly during the day.

Treating the Gut: Supplements and Diet

There are medications that block it, things like levothyroxine, which you actually treat thyroid hormone with, metformin, birth control, statins, and so on.

So it's a very thinnaky hormone. First of all, we're starting off the whole cascade with a hormone that is finnicky, it decreases as we age, et cetera.

But let's say that we get the signal that, oh, I'm cold, So TSH leaves my brain, goes to my thyroid, knocks on the door like, hey, I need thyroid hormone.

Our thyroid is then supposed to release thyroid hormones. That happens if you have the right micronutrients and hormone available to relief. You need iodine, you need selenium, we need glutathione, need all these things to make thyroid.

So that's assuming that you metabolized and absorbed enough of that from your gut. So then now the thyroid's like, okay, fine, I have T4, T3, let me release it.

We release mostly T-4 for easy sake. I'll say 95% and 5% T 3. So that gets released into the bloodstream, right? Because you've got this cell over here that's, like I'm cold, and need to grow hair.

Where's my energy? So, now T4 and T3 are floating around in your bloodstream. T-4 has to convert into T 3 because T 4 is kind of like, oh, I'm here. I am your checking account.

Or, sorry, your savings account and your check account, which is wanting to be spent, is the T three. And so, most of it is in our savings accounts and a little bit is our checking accounts.

So we're like okay, how do we pull from our saving account into our check accounts? How do you make T Three? Well, that happens in the body by something called D-Ignases, Which, guess what?

Anything that happens in a body, anything that's a chemical reaction, there are things that make that reaction better or worse. So let's talk about the things make the reaction worse that slow it down.

One is age. Two is insulin resistance, so that sad American diet. Stress, inflammation, high cortisol. All of these things will decrease how fast your savings account can be put into your checking account.

So it's like, I'm sorry, we're not online today because we have too much insulin. You ate like crap. Your stress is too high, you didn't sleep. We're making any transactions today.

And your cells are like but I am cold and I need to grow hair. Everything is kind of bound up in your savings accounts. A lot of that conversion happens in your gut too.

So if you have candida, if have leaky gut, all of these things that are happening in you gut decrease that conversation as well from T4 to T3. And so this is where the gut really plays a role.

If you're gut is the reason your insulin's high, your stress is high. You have all these bad bacteria in and your immune system isn't working. That conversion doesn't happen.

But let's say we made it to this point and actually everything's online and we were able to get money out of our savings account and put it in our checking account.

And now we have T3. So T 3 is on the way to the cell and it's like, all right, let us go. Keep in mind it is trying to find where it supposed to be and if we had a lot of information from, you know, insulin, cortisol, stress, infections, inflammation, whatever, it's hard for it to see.

It's harder for to find where it is actually going. So it was like nighttime and there's no lighthouse and the boats trying to fine the dock. Let's say it gets there without the light.

Now it like, okay, I want to come into the cell. Well, the other thing that has to happen is the cell has accept the hormone inside. It takes ferritin for that to have it, it takes more iodine, B, D.

And the T3s are knocking on the door like, hey, I'm ready to come in. That environment out there is so toxic. I am not interested in opening the doors and letting you in, like I don't want you right now.

And so all of those things have to happen for the T3 to even get into the cell. So there are so many people walking around that maybe just don't have enough T-3.

They don t know because nobody's checking their labs or checking a TSH. Or maybe they even have T 3, but we can't check yet intracellular T three levels.

Thyroid Conversion and Reverse T3

Although it's circulating in the blood, it still might not be getting into your cell, so that's the problem with thyroid hormone. It's pretty in-depth.

Yeah. And then, and then you dumb reverse T3 on, then it's a whole, it' a hole show. That's awful. I mean, I was

trying to keep it simple, but yes. No, yes, if maybe our free T4 is making reverse t3 instead of free t 3 and that's causing even more inflammation.

So there's just so many steps and just think that the endocrine society guidelines for hypothyroidism were written in 2012 and haven't been updated is embarrassing, number one.

But number two, only talk about checking TSH. And then the guy who wrote the guidelines, also Jeff Garber published a paper, I think in 2017, that was like, TSH is actually not that important and here's why.

And he listed all the reasons why, but he's the guys who write the guidance about it. It's all crazy. But this is why so many people have symptoms of hypothyroidism and are really sick and not getting treated.

Then when your thyroid isn't treated, your body doesn't like that. When you're T3 deficient, then guess what? Eventually it's going to stress your buddy out, so your cortisol is going eventually your insulin is going to go up, and then you start gaining weight, then your cold, you don't want to get up.

Then you have all these overgrowths in your stomach because that's another thing we could talk about. Hypothyroid patients have a very specific gut microbiome.

It is not the same as normal people. They get certain overgrows, they get bacteria that then leak and cause them to be more depressed or more anxious.

Nobody's helping these poor people because nobody gets No, no, it's sad, and again, I think we could talk about an hour on this one, but in general, yeah, couldn't agree with you more.

I thin, you know, the thyroid's overlooked, stomach's over, like, everything is overlooked because nobody's really putting it together. So, to have people come across the aisle like you did, world-renowned endocrinologist, It's always great to that more in the wellness industry.

So Dr. Cassie, can you tell everybody who's listening where they can find you, where can see you know, especially with your book and everything? Of course.

Thanks for asking. So we're very active on social. It's at Modern Endocrine Underscore, so M-O-D-E-R-N and E-M-DO-C-U-I-A-Y. But if you look, Dr Cassia Smith, you could probably find me.

We have a website, modern-endocrin.com. A lot of free resources there. I have quiz you can take to kind of figure out do you really have an issue or do not.

And then the book Fix Your Gut, Fix your Hormones, it's on Amazon. It's also on Audible and Spotify. I tell people get the audible version and even go through, look at the chapters and figure out what am I struggling with?

Where to Find Dr. Cassie and Closing Remarks

What do I really want to learn? And take me on a walk with you. Take me in the car with. You just don't listen to me while you're eating. Please turn it off and chew your food.

And I have a podcast, H hormones Metabolism and You, where I interview people like you and trying to just get the word out there to people so that they can be their own best advocate and not take your fine or your TSH as normal for an answer.

I love that. Well, thank you so much for stopping by. It's been an absolute pleasure having you. Again, we're the Lifestyle Medicine podcast powered by Access Labs.

If your doctor's not checking your labs, they're not a doctor. Dr. Keats, Thank you, so, much, for stoping by us. And it's such a treat to have somebody who is as knowledgeable as you are, especially in the gut biome and everything

like that, So thank Alright guys, have a good one.

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