Introduction to Thyroid and Insulin

Hi everyone. Welcome to Doctor Talks. I am your host, Doctor Kelly Halderman. We're continuing our series on thyroid health. And today we have a really awesome guest, Doctor Rita Marie Le Scalzo.

She is here to talk to us about thyroid and insulin, which is a really important topic. Welcome, doctor. Rita Marie. Well, thank you for having me here.

I'm super excited. I love talking about hormones and some of those little known connections. Yeah, definitely. And this is the big one. I think in functional medicine we do a lot of things very well.

But I think this connection I'm excited to talk to you about it. So let's just let's start off let's dig into how the thyroid and an insulin are connected together.

Yeah. So here's the thing. We have this hormone called insulin for those. You know I can I don't know how familiar your audience is for that. But Insulin's job is to basically get the sugar from your food out of your blood and into your cells and give you energy feed into the mitochondria creates energy.

And so it's really important. And what happens is people eat and live in such a way that it causes a lot of stress on the insulin producing systems, and the insulin goes away.

Five and a lot of people, long before they get diagnosed with diabetes, pre-diabetes or even insulin resistance have very high levels of insulin. And what people don't realize is, yes, that maybe at the early stages of that, getting all that sugar into the blood and you think, oh, high levels of insulin are good, right?

Because they get more sugar into the blood, I mean, out of the blood and into the cells and now have lots of energy. But that's not the way it works. So over time, those cell receptors get very resistant to insulin.

And so we develop insulin resistance. So the levels go high. But then it's not getting into the cells. And after a meal you feel tired. Well what most people don't realize is that high levels of insulin not only lead to insulin resistance, they lead to resistance at a cellular level of just about all of our major hormones.

And one of them happens to be thyroid. And I believe that thyroid resistance is one of the most frequently overlooked causes of people having hypothyroid symptoms.

And it's especially true when people say, oh, I'm tired, I can't lose weight, I'm cold losing my hair. And well, that sounds like a thyroid problem. And then they do tests.

And, according to the regular testing, like the conventional testing, everything looks normal. But then even if you look at it in the functional ranges, looks kind of normal.

There they go. Oh, you don't have a thyroid problem. You know, here's something for the constipation, something for the depression, something for right.

How Insulin Resistance Affects Thyroid Function

When in reality what's not being looked at is are the the levels of the thyroid that are in the blood reflective of the levels of thyroid in the tissue.

And that has to do with the receptors on the cells and how able they are to take that out and put it in. And there's lots of things that damage those receptors.

One of those things is high levels of insulin. And when we have high levels of insulin, we can't get the thyroid hormone into the cells as effectively as we need to.

There are other things that affect it inflammation, excess cytokines, excess, homocysteine, which is a marker or methylation in the blood, excess, or a deficient vitamin A those those things affect and excess or too little cortisol.

So all these things affect it. But insulin is a key one. And when people have insulin resistance, they generally also have resistance to thyroid hormone getting into the cells.

So that's one way that it affects. So if there's any you know, clarifications there I'm happy to stop there. But there's other ways. Yeah I think that's interesting.

And maybe we'll go into the other ways right after, this little rabbit hole is that a lot of people will just simply check their glucose levels and, you know, they'll their doctor will tell them, just check a morning glucose level.

You just check one, you know, if they're thinking that maybe they're blood sugars off and their glucose levels are fine and they're like, oh, I'm fine, I'm totally fine.

And they neglect to check insulin levels, right. And so you're not seeing the whole picture here. If it walks like a duck and quacks like a duck just because your labs are normal, right?

We're totally on the same page here, does not mean that all your cellular physiology is normal, right? Exactly, exactly. And one of the things people don't realize is thyroid resist illness is not a thyroid problem.

It's a more of a systemic problem. Right? Right. Because the thyroid is functioning beautifully. If that's the case. Right. We usually do see though, thyroid resistance superimposed with other things like lack of T4, autoimmune thyroid condition, T4 to T3 conversion.

That's the second most overlooked problem when it comes to thyroid function. And again, T4 to T3 conversion. It's not a thyroid problem. It's usually either a gut problem or a liver problem, or a adrenal problem, or an inflammatory problem that interferes with that conversion from T 43.

And just, you know, probably by now and listening to your podcast here, people then listening, they know what T4 and T3 are or if you're on any medication and you have a problem with T4, is the the thyroid hormone that's produced by the thyroid gland, most of it, 90% of what's produced by the gland is steam, for 10% might be T3 and T2 and other things, but when we look at that and we say, okay, there's plenty of T4, but there's not enough T3, T4 doesn't get into the cells and create the activity.

It's the T3 that's the active T4 is kind of the storage hormone. And so what a lot of docs are doing, they're not looking at T4 into three. They're looking at TSH which is a pituitary hormone.

Right. That gets secreted to push the thyroid to take action like, oh hey, that is not producing enough. Well we just looked at the blood. There's not enough T4, there's not enough T3.

So let's just make the thyroid make more. And when that's happening, the TSH is high. A lot of doctors just say let's just give you thyroid medication.

And so they give what do they give more T4. So if the problem is not T4 the problem is the conversion between T4 into three, then So I'm getting to this because that's another way that insulin affects it decreases the conversion from 1040 T3.

It interrupts that. So isn't that interesting. It's fascinating right. All these interconnections. And here's a oh you have a thyroid problem because your TSH is high here.

Take thyroid hormone. You have nothing to do with it. And guess what. When you give somebody T4, when you

give somebody more thyroid hormone, or whether they give armor which has T3 94 or a bioidentical, that's 23, you can actually cause more of the thyroid receptor resistance.

Because our bodies are like that. We go, oh, too much, let's shut down. Same with the insulin, right? The reason that the insulin resistance occurs is because the cells are saying, wait, wait, I don't want to be damaged by too much of that.

Already had enough and done. So these are all the things that we that we take for granted. And when most people and you probably see this yourself, is that when people have a thyroid problem, they're usually either misdiagnosed or they're mistreated, because the standard medical approach is to just give the T4 synthetic gi synthroid or leave out their rocks and but the, the functional medicine oftentimes that approach misses the mark because it's oh you've got a thyroid problem.

Let's just give you natural thyroid arm or thyroid aid. You know whatever those other natural or glandular right. Whatever. But we're not really fixing the problem, which may not be the thyroid itself, maybe other parts of the body that are impacting the functionality of the thyroid.

I agree, in our, book that I just published with Doctor Eric, well, cabbage called the Thyroid Debacle. We talk about the cell danger response in that when you have massive amounts of cellular stress from environment, from the food, you have emotional stress, gut stress, okay.

It's weighing down in your cells this cell danger response are waving the red flag saying, you know what we are to we have to change some things. And changing those things sometimes means that your cells don't want to allow the glucose into the cell because it'll be hijacked by a pathogen.

T4 to T3 Conversion and Reverse T3

And so T3 actually turns on the gluten receptors glut. It'll turn on that receptor so the glucose will get in. But when you're in a cell danger response your body intuitively knows to shut that down so that it's not converting.

So it's not a good idea then to flood someone with more thyroid hormone. Because you are you're taking the body's natural, natural wisdom and you're trying to override it.

So you and I are saying that we are on the exact same page, which doesn't happen a whole lot, is, you know, well, that's the paradigm of telepathic medicine to check the TSH.

If that number's fine, you're fine. You know, it's fine. It's just antiquated and it's causing so much suffering. Right. So I love I love this approach.

A you're, you know, this physiology when you understand we can really help people. We can help change the paradigm. Because definitely just this this measuring of the TSA and measuring of the they are not understanding that that cellular stress.

What are we in agreement. Yeah. That is totally on the right page. And you know, just taking it another step further with the thyroid we have free T3 which gets in and it's the it's the accelerator on the cell.

And we have reverse T3 which is the brakes. And a lot of times the T4 when it's not getting converted to T3. And it could be because of all the other things I mentioned.

But insulin being a problem there, then what happens is it gets converted to T to reverse T3 and reverse T3 slows things down, but sometimes it's not a pathology that's causing that lack of conversion.

It's that body safety net, right. That's causing it because there may be an infection somewhere. There may be some sort of inflammation somewhere that we want the body to deal with that.

So we don't want all this energy that we're going to waste going hiking in playing. Right. We want to get the person to slow down so that that underlying healing can happen.

That's right. The I always talk about, I use the analogy with, you know, if you get the flu, you're supposed to be in bed and you're supposed to be tired and you're not supposed to be procreating and running around and chopping things.

That's what your your body's like. I need you to slow down. I don't need more energy. Right. It's very it's very, the much the right thing to do is to sound like production down.

But I do agree with you. And so then when we're getting, prescriptions for synthroid to, you know, T4, let's say, and we're throwing that into the system when the system's already like, no, I'm not, you know, we're not going to convert this with this is we're not gonna we don't need this.

It ends up going to reverse T3. And we haven't solved any problems whatsoever. So yeah, you can call it a vicious cycle. I really like that. The the vicious cycle if there's anything that we missed on that.

But I mean, it is a vicious cycle. It is. And you know, here's the thing. What people want. Oh, I have low energy and I have a thyroid problem. They go and they feel like they're solving their thyroid problem because they're taking the medication or the glandular or the herbs and whatever.

But with they're not looking at is this insulin thing. And I think that insulin plays into so many other things in the body, right, that if we don't solve our insulin problem, if we don't solve our blood sugar problem, we can't solve the thyroid problem.

We can't solve the hot flashes in the reproductive hormones, we can't get the sex drive back. We can't do any of that stuff. Because if we're not properly, energizing those cells, it's it's it's.

Yeah. So the thyroid is the mechanism that turns the thermostat up or down on the cells and allows the cells to be more efficient at burning. But you got to get the fuel into the cells.

And in order to be able to do it right. So they have to be working in conjunction with each other. Absolutely. So do you think that the thyroid can be impacted by the blood sugar and the insulin, even in people who haven't been diagnosed with diabetes or insulin resistance, in people who haven't been diagnosed?

Right. The diagnosis of diabetes happens probably 30 or more years after the problems begin. And meantime, all of the negative downsides of diabetes, like peripheral neuropathy and retinopathy and nephropathy and all those things, they're happening for decades before because medicine is antiquated in its diagnostic process for diabetes.

Diabetes just doesn't happen as soon as your blood sugar crosses from the 19 into the 20s, right when 19 into the 20s? No, it's been happening forever.

And there's other really good diagnostic procedures, but it's not taught in in medicine, it's more stuff that, you know, we discovered is functional medicine.

But when my my way of looking at things is understand the body's chemistry, understand the biology and how the body works, and then when something goes wrong, we can go, okay, what are the possibilities for what's going wrong?

And yeah, sometimes you have to fix things that are symptomatic level, right? A high level, right. You're having hot flashes and it's just destroying your marriage and you can't sleep.

Okay, let's do something to help with those hot flashes. But let's look deeper to see what is really at the cause. It could be blood sugar and insulin and hot flashes are hugely related.

Right. And then it could be the gut problem and it could be that, you know, stress in the adrenal burnout. It could be the thyroid.

Cell Danger Response and Thyroid Treatment Pitfalls

So we have to really go deeper at these levels. And what I've found in over 30 years of practicing this is that many, if not most, of the problems that I see are related to an underlying blood sugar dysregulation that most people aren't diagnosing.

So I have a new term that I coined which is pre insulin resistance. So diabetes is when the blood sugar goes into the one 20s and B and above. Insulin resistance is medically looked at like blood sugar somewhere between 121 and 101 20.

Right. And there might be some other things, but that's pure insulin resistance. But nobody's looking at it. What's happening when the blood sugar, the fasting blood sugars creeping up between the 80s, where it should be and the 100.

Right. But more so than that, even when the fasting glucose is perfect, what happens is we've got people who are having, postprandial after eating glucose that are low and then they come back down again.

And because medicine isn't checking insulin, they're not checking hemoglobin in C except in people who are already diabetic and they're not looking at postprandial glucose.

We're missing all these people. And I have literally seen people who developed, retinopathy like, started to go blind from diabetes. And they were never diagnosed.

They've never been diagnosed, but their sugars were on such big swings that they had hemoglobin A1, C's of ten, they should be five. And they had the damage to the retinas because nobody was testing.

Oh, because their fasting blood sugar was 98. You know, it's not an esoteric concept to say that people are frustrated with the standard of care. It is really well documented.

It's not just us, you know, going around complaining that that the system is antiquated. People are not getting the results they want, and you just hit the nail on the head about why we're we're not we're not checking enough.

We're not checking the right things. We're we're completely ignoring people until they fall off the cliff. Exactly right. So there's over the cliff and no one's sounding the alarms, and we'll go off.

Oh, yeah. Sorry. So you fell off. So, you know, I, I love this. I think you talk about it in your book, Unstoppable Health too, that we don't we can't let people just keep on keeping on.

It's no you know, everybody loses, right? We're it's sick here. It's sick. Sick care. We need health care where need we need health care. We totally need health care.

And this is the paradigm where you start concentrating on your insulin levels and you start looking at those. So I have two questions. The first one is your thoughts on continuous glucose monitoring.

Do you 00I support continuous glucose monitoring for four years. Oh wow. You're an early adopter. Oh I was and I was having people do postprandial glucose testing with a meter for the last 12 years like way before it got popular.

Now, I don't know why I missed the boat on the marketing of it to become the one that put it out there. I've been teaching it for 12 years, and I started talking about the continuous glucose meters before they were available to the general public, and I can't I can't wait for these to come out.

You guys can't wait for this to come out. And now they're available. Now they are by prescription only in the US.

But there are companies that help you get around that.

And so you can definitely get them. And convincing a doctor to give you a prescription is an important piece of the puzzle because you're educating them.

You're saying, look, no, I'm not I that I don't want to become diabetic. So I want you to prescribe this for me so that I can do what I need to do to optimize my diet, optimize my stress levels, optimize my my movement, to optimize my sleep, to do all these things that I can do.

And I can see how these things affect me and make diet and lifestyle changes. And it more and more people have to ask, so don't just run off and pay extra money to these companies that do it, which I am blessed them that they do it.

But first ask your doctor and educate your doctor that this is important, that I don't want to. I don't want to go blind. Before you tell me that I have a blood sugar problem, I don't want to have neuropathies in my feet and get ulcerations.

Before you tell me that there is a problem here. Okay, so, Doctor Rita Marie, if I was just a layperson and I want to be preventive, I want to be proactive.

Prevention is number one for me. What do I walk into? My conventional doctor and ask for? For testing was for testing. You say I would like a fasting insulin.

I would like a hemoglobin A1. C I want my fasting glucose and I want to look at inflammatory markers. I want to look at C-reactive protein homocysteine and things like that okay okay.

And so and then we're also just ask for the continuous glucose monitor because why not.

Blood Sugar Dysregulation Beyond Diabetes

Or we you know we we let's say I perceive that I'm really healthy. And then I walk in and I have an elevated insulin, you know, I have an elevated fasting insulin.

And lo and behold, there's something for me to work on. There's definitely something in. And I'm I you know, I would suspect if that was longstanding and I didn't proactively go in and talk to my doctor.

You're you're 100% right. We have retinopathy, we have kidney issues. All these things are smoldering. So I go in, I get that tested. I'm well aware now that I have a high insulin level one of the tools, again, like you were saying, is continuous glucose monitoring so that we can be our own detectives.

Right? So we can we can understand how the food that we're taking and how it's affecting our blood sugar. Can you kind of go through how you would guide a client patient and looking at like numbers like, oh, I eat an apple for breakfast.

And it's like, can you kind of give us an idea of what's holding? Yeah, absolutely. I like to see the fasting in the morning in the 80s. Low 80s better or lower.

A lot of people say, oh, it's got to be, you know, no 70s or 60s, as long as a person is really they're conscientious and they're following a low carb diet, they're not eating sugar and all that.

We can see it in the 70s or 60s and they're asymptomatic. They're not passing out. Yeah, I mean, I love when my blood sugars in the 60s, that's what I strive for, 60s to 70s, low 70s, because I feel really good that my brain is on fire a little bit of ketosis going on and works really well for me, and it works that well for my clients.

But I would. So I'd say look for that in the morning. There's somebody eating lollipops and all this stuff in their blood

sugar, 60 in the morning. It's probably because it was like 150 before they went to bed and they had a crash overnight.

Just saying. So you got to take that into account to conscientious and you're watching this. Most people don't get down in the 60s until they're really working at it.

Right. So I would say that and then after eating the excursions, so if it's somebody starts in the 80s, I say it shouldn't go above 110. Absolutely not.

And when I look at the studies, I mean, look at when some of these damaging effects happen, right around 120 is when we start to see some of the nerve damage.

And it's not going to be like you have the neuropathies if you only occasionally have that happen. But there's a little bit of damage, a little bit of damage and a little bit of damage.

And over the course of decades, that's when we see those and go, Why are my feet numb? Why didn't I feel it when I stepped on a nail? I that because we're having our bagel and cream cheese every morning with our orange juice, and we're spiking this button every, every day, right.

So those it's a thousand papercuts is what we end up. Diabetics. The numbers, the nerve, the sheer numbers of the amounts of people with prediabetes, diabetes are just absolutely shocking.

So continue on I love this. So we don't want to go for bread eating. We don't want to go above 120. Okay. Yeah. If you're a diabetic already and we have a lot of people join our programs are diabetic and they're fasting glucose is even on medication or like one 4120, you know, whatever.

Then I say start with never going above 20 to 25 points from the start of your meal. So tested at the beginning of your meal. And if it comes up more than 2025 points, let's just not eat that food for a while, because what we have to do is we have to give the insulin receptors a break.

And I've been doing this for like 12 years, running a program as part of our blood sugar balancing called a metabolic reset. Now everybody's talking about medical resets.

But you heard it here. First year of metabolic reset 12 years ago. And what I do is what it means is we're we're getting giving those insulin receptors a rest for 30 days.

So we just take away all the things that caused the the insulin to go up. And we do things to help bring the insulin levels down. So just give the cells a rest.

So it might mean that you're not eating any fruit for a month. It might mean that, you know, you've given up a lot of things. You know, grains and stuff like that.

You have it. We have a structured program. We have people test. And if they they can eat an orange, for example, and it keeps their blood sugar in that nice steady range, then fine, you eat an orange during this.

But if that orange brings your sugar up to 150 or 1, 35 or even 120, then we're not going to do it for a month. But it gives the receptors a chance to heal.

And then we do, you know, nutrients and foods and special things that help it to heal. So that's what I look at, is that those those receptors can heal.

So they have to do a really restrictive diet. And you do have to make sure that you're moving because trained cells pick up the insulin better and the glucose better.

You've got to look at your sleep levels. You've got to look at stress levels, high levels of cortisol. It causes the sugar

to go up, which causes the insulin to go up, which propagates the problem.

And then it affects the thyroid. So, you know, we start out talking about thyroid and no one to forget the poor little butterfly in our net.

Using CGM and Testing for Prevention

But all of this stuff, if you want to get your thyroid working, you got to get your blood sugar. You got to look at the blood sugar as a primary piece of the puzzle.

You can't just go and get the synthroid or the glandular or whatever else makes sense. Yeah, I totally, I totally agree. I think that everything is connected.

And so, you know, when you're doing better things for your body, there's a lot of things. There's a lot of systems, like we just started off before we were recording.

We're like, we need to get our water. We need to have some water on hand. And I said, every, you know, water makes everything better. We talked about how hyper hydrated we are.

So I think a really important message is don't forget the basics, right? Food. Food is medicine. Food should be designed that way. And everyone is different.

Everyone is biologically. I mean, there's a lot of similar pathways. Obviously, biochemistry wise, but I love that you're having people tailor what, what they're instead of a protocol like, don't eat anything out there, don't eat you just don't make that assumption.

And I think that's important for people because people get really frustrated. They get put on these protocols and, you know, it's not doable for them.

And maybe, you know, I actually was wearing, my, my CGM and it was popcorn. I mean, really no surprise, but it was spiking me to like 160. Wow. And I was like, oh my gosh, I shall never eat popcorn again.

But if I didn't have the data and I just think that the future is and, you know, you saw this 12 years ago, it's it's really you know, the the rubber meets the road with what we're what we're applying to our physiology.

We don't there's so many things we don't know and we don't have a good practitioner like yourself to come in and explain to us. We're the typical I'll just laid out the typical patient, might come in with a, a list of hypothyroid symptoms, of gaining weight.

I'm tired, like you said. And their doctor says your TSH is fine. Well, FYI, inflammation decreases your TSH, so it suppresses it. So, like you said, ask for those inflammatory markers because that could be misleading.

So I digress. So you go in and you're TSH is normal and you feel powerless. You feel like there's nothing you can do again walking toward that cliff. And again, insulin, that insulin, thyroid connection go into anything that we may have skipped over because I got so interested because your skill set is just phenomenal.

Doctor reiterate go into anything that we miss on how, the receptors, insulin receptors or anything with the thyroid. Is there anything that we skipped over physiology wise?

We talked about the T 43 conversion and insulin affecting that. We talked about the receptors and insulin having a, issue with that. I mean, it can actually affect the production of T4 and T3.

It can actually create inflammation that can lead to some, autoimmune. I haven't even touched on that. I'm sure you have other shows that are really that's another like there's those three things that are most overlooked when you just do a TSH receptor resistance.

You've got, the, T4 to T3 conversion and then you've got autoimmunity. All those three are non thyroid problems, but they present as a dysfunction of the thyroid because these things are causing it to be out of whack.

Well the the recept the autoimmune is huge right. Have we have autoimmune condition going on. It's going to affect the insulin receptors as well as the thyroid.

It's going to affect the production of the thyroid hormone. So we have to look at that. And that's where some of those inflammation markers come in. But we have to just do a complete thyroid panel.

And that's the thing. If somebody wants to see how well their thyroid is functioning, my complete thyroid panel is to say total T4.

Complete Thyroid Panel and Closing Resources

So that tells me how much the thyroid is capable of making. And of course, if you're on medication, it's going to count all that too. But total T4 free, T4 free T3 and really look at the ratio between three T3 and free T4.

We're also going to look at the ratio between total T4 and free T4, to see if there's something getting in the way of the thyroid becoming free and unbound.

So there's a lot of that going on that could be related to birth control pills. It could be related to, you know, bioidentical hormone replacement in in menopausal women.

All these things. So we have to look at those things. But we also need to look at the TPO peroxidase antibodies. And then we have to look at anti thyroid globulin.

Now in addition we want to look at how is how is the thyroid affecting the rest of the body or how how's the rest of the body affecting the thyroid. So I like to look at course cholesterol because thyroid low thyroid will bump up the cholesterol if it's truly low thyroid if it's not just looking like that, you know.

So, and then I also like to look at insulin. This is part of my complete thyroid. I already have my insulin that's in glucose. But you know, it's not that important because it's not that accurate.

But and hemoglobin A1 C and then C-reactive protein and homocysteine. So there are and if you can get vitamin A that's a good one too because vitamin A will affect the receptors.

So that's what I look at as a complete thyroid panel. Very nice. Yeah. I think that a complete thyroid panel is not a TSH and a reflex, free T4, I think.

I think though that was long ago. That's been antiquated. Yeah. So long ago. Well, you know, it has just been such a pleasure to have you, doctor Marie.

You know, I wanted to definitely, you know, pick your brain on this particular issue. I think that thyroid insulin again, vicious cycle. It's just very much appropriate.

And you do a really great job. Amazing job at elucidating that connection that is really very much missing in allopathic medicine. It's, you know, you go to your endocrinologist and you go just everything's separated.

And yet again, we, you know, it's a holistic approach. I think it's it's completely spot on. So if someone wanted more information about you, whether they're a practitioner or a layperson, where can we find more information?

Absolute. So we have training programs for practitioners. And you can go to any method.com right now. It just is a brief summary of what we do. But we are working on our fancy schmancy website should be available probably by the time this is out.

So I method.com. And then my main website is doctor Reed and recom again it's going through an overhaul. So but I'm on Facebook as Doctor Rena Marie I'm on Instagram is Doctor Rita Marie, I'm on YouTube as Doctor Rita Murray.

And what else? Where else am I now? I think that's about it. I think I might be other places, but easy to go, easy to find us. We have lots of good free resources.

We do webinars very regularly, like probably 1 or 2 a month even. I have attended your webinars. They are so impactful in a short amount of time. They're so robust.

So like they're in a very practical like from a, you know, a lot of different perspective. So I love those I encourage people to to sign up for those.

Check out those. Yeah. So thank you. Thank you. Yeah. Well it was a pleasure. Thanks again for your time. And, I'm sure we'll see you at a functional medicine conference very soon.

Yeah, yeah. Take care. You too. For.