Introduction to Thiamine and Gut Health

Now there's a whole body of evidence and interest that gut health is related for the same reason. So you look at the gut, right, in the enteric nervous system and the vagal nervous.

And again, the very same thing. You look the lower portions of the brain, and they're sensitive, they don't get enough thiamine. When that happens, you can get abnormal vagus tone.

Then when that happened, she can go lower acetylcholine. And then a whole cascade can start with lower stomach acid, lower pancreatic enzyme. Motility, particularly, you see a lot of issues with gut motility and thiamine, and even intestinal barrier function and intestal immune function, all of that coming down from the brain down.

Hi, welcome back. It's Dr. Jen with the Healthy by Dr Jen podcast. So today we're gonna talk all about thiamine, probably more than you would ever wanna know about Thiamin, but you really should stay tuned so you know if you're taking the correct supplement or not.

I'm here today with Bonnie Thiel. She is a health educator and has worked in the field of wellness education for over 40 years and she looks fabulous.

so she's obviously doing a good job if she look like this. So long before podcast, she hosted the only live Colin radio talk show in Atlanta, Georgia, the focus solely on nutrition and integrative medicine on the CBS affiliate WRNG radio.

She interviewed nearly every early pioneer in the field and served as the community liaison. for the radio public appearances and community lectures. At that time, she founded a non-profit health educator association for purpose of educating both the public and health professional community on the value of integrating nutrition science, environmental medicine, fitness, psychological-emotional support into a model of disease prevention.

Bonnie Thielu2019s Background and Dr. Lonsdaleu2019s Thiamine Research

Now, if only the government would have accepted that. Her Health by Choice conference was presented annually for 13 years in Atlanta, and she's also organized numerous wellness retreats and expos.

She received her health coaching certification from the Institute of Integrative Nutrition in 2011, And for 26 years, she has worked with Ecological Formulas as their product educator in the face of the company of integrative medicine conferences across the nation.

Welcome, Bonnie. Thank you, like this over here, that we're today. I know, I'm so glad to have met you here. Well, okay, when I think of thiamine, well, before practicing integrative medicine, I would just think Thiamin as the banana bag and what we would give in the ER for alcoholics.

Right. So true. It's not just that, it's just a B vitamin. You think it is pretty special. I know it near and dear to your heart. Introduce us to it. Yeah, yeah, well, I'd like to just do a slight disclaimer before we start that, as you said, i'm a wellness educator, so I am not, if I'm an expert in terms of being a physician or a scientist or researcher.

However, to interview some of the true pioneers in this field, and it just happens that the thiamin pioneer by the name of Dr. Derek Lonsdale was my personal mentor.

And he, I brought along his book, which was the classic, we'll put it here, a classic book on thiumin. Thiamine Deficiency Disease, Dysautonomia and High Caloric Cal calorie malnutrition, right?

So when was this book published? Gosh, I should look at the original because this is a republished one. Well, but when about was the originally? Yeah, trying to turn into the early pages here, because I'm thinking, this one was republished in 2017, was he began using and researching thiamine at the Cleveland Clinic clear back in the seventies.

Yeah. So my point is this. He was talking about dysautonomia as a symptom and not as the diagnostic like POTS because for me Pots is a. Symptom. Yeah, so he's been talking about this in high-calorie malnutrition, which means eating junk food.

I mean, he was all over this before. He was so far above, and in addition to writing this text, He published over 100 articles, He was actually a pediatrician by training, and he worked in the Cleveland Clinic, And he spent time researching the relationship of thiamine to metabolic brain disease, particularly with children.

And exactly what you saw, he was seeing these kids consuming all this soda and all these junk, junk foods. Back then, early on, it was called hyperactivity, right?

And so that's where he first got interested. Then he later went on into a clinical practice in Cleveland, Ohio for another 20 years. He practiced until he was well, probably 88 or so, lived to 100. And he just passed away two years ago.

So anyway, I'm going to defer to him a lot, but his co-author, Dr. Chandler Mars, she's doing a great job even now. She's got a wonderful online resource called hormonesmatter.com.

And she has a lot of articles about thiamine that are fascinating, too. And then, actually, a lotta the guys here in the Academy were here at the International Academy.

They love thiumine. Right, right. So I've learned a little from them as well. Anyway, that's my disclaimer. I'm gonna be deferring to them. But just like you said, I think that part of the reason that it's really not utilized as much as it could is that the majority of doctors or even dietitians are taught that classic textbook presentation that if you don't see alcoholism or severe malnutrition or maybe eating disorders and maybe bariatric surgery.

If you do not see that, then there is no reason, right? But what Dr. Lonsdale showed is Not only are many, many people not consuming it, because honestly, when you think about where it is in our diet, pork is the highest concentration of thiamine in the diet.

A lot of people don't, you know, even eat much pork. I'm good. Yeah, I love bacon. Bacon doesn't count. Wait, it doesn? Then what part of pork? You just ruined my day.

curate or whatever, the B1 isn't there anymore. But at any rate, not only are people not consuming enough, but exactly what he's talking about, that the highly processed, refined diets like bacon are depleting it.

What Thiamine Does and Why Deficiency Matters

I do eat pretty well. You can tell you do. Yeah, I still started taking higher dose thiamin after August, after the the International College of Integrated Medicine after that presentation.

I've heard a few on it. So that's why this is so cool to talk about because And we'll get into detail because this is a B vitamin. So if you take a methylated B, it's helping, but it might not even be enough is the problem.

Yeah. And I think maybe it may help a little bit just to cut it back for those who don't know just the basic thing, what does it do? What does the one even do in the body?

The history of it is that way back in late 1800s, this kind of mysterious illness emerged that was manifesting largely in countries that were eating a lot of polished rice.

And it was manifest where they were getting extreme weakness, especially legs, walking disorders, and then heart failure. Sometimes it fatal and mass confusion and they just didn't have a clue what was happening, right?

So it was the early 1900s and a Dutch physician finally started experimenting with animals. I think he used chickens, and when he gave them the polished rice, they'd get the symptoms.

And when they gave the rice with the hull, the systems would go away or would never manifest, right? So, they found out that's where the B vitamins were, but it wasn't until like, I don't know, 10, 15 more years into the 20s that they identified what was called an anti-Berry-berry factor.

And they kind of brought it out, and it didn't become identified as a B1 until 1936. It was the very first vitamin, not just the first B vitamin but the most first one that was ever discovered.

Those poor chickens. Yeah, right. I'm just kidding. I have a bunch of chickens. They would eat anything. Anyway, so Berry Berry, they called it that. And then they were like, well, this is an anti-Berry Berry factor.

a vitamin, and then named it B1. I don't know if they knew there were going to be other 2, 3, 4, 5, 9's later. Basically what it does, just in the simplest way to look at it, is it helps convert largely the carbohydrates in our diet, although to a lesser degree the fatty acids and the amino acids, to use the energy that we can actually use, right, ATP.

So even though all the macronutrients are involved, it's predominantly involved in carbohydrate metabolism. And that's the reason why the cells in the organs that are most susceptible to needing high energy demand, right?

So it was going to be your brain, your nerves, and your heart are the things that just are not going function properly. And from that, Dr. Lonsdale said that he thought that even a slight deficiency in thiamine could, in his words, derail mitochondrial function.

And, from then, what could rise up would be the dysautonomia, initially. But then you and I looked at earlier this chart of all these different body systems that could be impacted, right?

Yeah. I guess when I think of thiamine, I just think the word energy, right? Because he called it the gateway to energy metabolism, all right. Yeah, and it makes sense if you're talking about the mitochondria and the symptoms that you get, what needs mitochondrial energy more, but also that if your mitochondrion are being kind of taxed or stressed, then that would make it even further a vitamin B1 deficiency, or it would Show even more.

Perfect. One of the things I love that he taught is he said that stress of any kind, whether it be physiological or environmental or emotional, whatever it is, it depletes thymine at the cell level.

And he would, he's said, that even in the plant kingdom, if they get stressed, they make more B1, but we can't do that, right? So we have to take it in.

But he then said that in his opinion, all disease is a form of stress that requires massive increases of energy and therefore maybe could benefit from thiamine.

Stress, Diet, and Common Thiamine Depleters

And so it was all about energy, you know, to him, which is why fatigue is such a huge manifestation when people are not getting the thiumine Yeah, and so many people have fatigue.

Yeah. So then you're like, well, does Do a lot of people have B1 deficiency? And the answer is probably yes. Well, if you look, again, what are we taking in, right, from our diet?

What are doing? We didn't even kind of talk about what other things deplete it besides just a high carb diet, because you and I don't eat a ton of junk food, but we might really like our coffee and occasionally some alcohol and even tea, you know, all those good things.

They depletes. a sushi if you ate it frequently because actually raw fish contain an enzyme called thiaminase that depletes thiumin. And so you think back in Japan when they're eating polished rice and a lot of raw And then when you begin to look at with your patients about the pharmaceuticals they're consuming, right?

And, you know, everybody knows, the diuretics are going to run out your minerals, but hardly anybody talks about that they also massively decrease your thiamine metformin.

They also, we talk a lot about needing extra B12, but we forget thiamine. B1. Yeah. And as many as 70% of diabetics need more thiumine, and then they're taking metformin, which depletes thia-min, right?

And then, oh, PPIs, you're right, your proton pump inhibitor is depleted. Again, we're learning so much about the different deficiencies, like I think we all know that the PPIs impact magnesium, but hardly anybody knows that it does thiamine.

So it's all these things that I that when you're doing a history with patients that you can maybe ask some other questions that could say possibly we should think about thiumine, Yeah, and how is it related to the dysautonomia?

Yeah. So again, Dr. Lonsdale said that the Dysautomia was the first symptom of beriberi. Dyssautonoma isn't actually one syndrome, it's like a constellation of symptoms that All stem from the parasympathetic and sympathetic unbalance, right?

The imbalance and the dysregulation of the autonomic nervous system. And so the symptoms can present in kind of an erratic fashion. And they could include things such as arresting tachycardia or other cardiac arrhythmias.

They could includes different kinds of sweating patterns. Some people don't produce enough sweat, some people over sweat. Certainly digestive problems, oftentimes especially motility issues emerge with dysautonomia.

salt and mineral imbalances. A lot of POTS patients, for instance, are going to need more sodium. So it's this whole constellation, but he said that it was the first presenting symptom of beriberi.

Yeah. Even before the cardiac and the brain fog, their body was like Was there autonomic? Yeah, because the way he explained it is that the lower portions of the brain, which would be like the limbic system and the brainstorms which do regulate the autonomia system, are specifically sensitive to thiamine deficiency.

And so that's what he kind of set the whole thing going. What's interesting is the gut, right, and enteric nervous system in the vagal nerve. And again, the very same thing.

You look at the lower portions of the brain, and they're sensitive, they don't get enough thiamine. And so when that happens, you can get abnormal vagal tone.

Then when it happens you get lower acetylcholine, then a whole cascade can start with lower stomach acid, lower pancreatic enzyme. Motility in particular.

A lot of issues with gut motility and thiumin. And even intestinal barrier function and intestal immune function, all of that coming down from the brain down, basically, through the vagal.

So say you're doing things to help with the autonomic nervous system like vaginal nerve stimulation and things like that. Could that overcome this deficiency or probably not, right?

I think that certainly any kind of vagal stimulation is going to have a lot of benefits. We're seeing so many wonderful things with that. But if, in fact, the origin could be the possibility that the thiamine is not present in in that brainstem area, and that's what his theory was.

Then, as I said, suddenly this whole cascade, we haven't really gotten into the Parkinson's story yet, but you look at, there's a whole theory called the gut-first theory of Parkinson, where for 15 to 20 years before any brain

symptoms appear, a lot of Parkinsons patients have a lots of gut issues, constipation, motility issues.

A lot bloating, that kind of thing. And, you know, if there is a relationship, in terms of the thiamine helping the gut and then the, gut being healed before it ever gets up to the brain, so it's interesting.

Thiamine, Dysautonomia, and Gut Function

I mean, it was all things to speculate about, but interesting Well, what about if you're thiamine deficient and you become pregnant? Is that going to hurt the pregnancy at all?

Again, when he was talking, I'm really glad you brought up pregnancy because actually when I talked to Lachlan, so my daughter was pregnant with her second child, a little girl, and he told me about a book called The Trouble-Free John Irwin.

And it was all about the role of thiamine in pregnancy. And I had never heard about this. I know that any kind of extra stress, which pregnancy is, makes more demands on any type of vitamin.

There's been so much emphasis on folic acid, thankfully, over the years. But hardly anybody was talking about thiumine, so this Dr. John Erwin He felt that it was probably the key to avoiding preeclampsia and gestational hypertension.

Interesting. Yeah. Okay. So my brain goes off on this because post-pandemic, there's been a lot more cases of pre-eclanpsia in pregnant women. And so for those that don't know, preeclampsie is high blood pressure in the late stages of pregnancy.

It can turn into seizures in an emergency. But the thiamine, huh. Now I'm going to have to talk with some colleagues to see if they try that because it kind of makes sense.

This is why I am going bring it all around. Because we all have this beautiful virus in us now that was given to us all. You know, no matter if you got it just organically, you know or if got a jab, but that, the spike protein specifically is creating more stress on the body.

So that's why I'm like, oh, stress. Like we probably all are more stressed right now unless we've detoxed from this. And that is just the one thing that came to my mind, like preeclampsia, there's been so much more of that.

If they're doing the same thing but this is post pandemic, this might be something that even without the added stress of the COVID, pregnancy itself is a stress.

Right, exactly. But I'm saying I think it's pushing some people over the edge that have never had a problems because I am talking to people about this and everyone's noticing it.

Anyway, that's like something I want to dig into now, Dr. Barney. I was blanking on the actual name of book, but I'll get it for you. Yeah, we can put it in the show notes.

Just to tell you what he actually did. So over 25 years, he treated over a thousand pregnant ladies. And he gave them 100 milligrams of thiamine, which seems like a lot considering that our day is 1.1 milligrams.

Right, right. And freenatal might have 5 or 10 milligrams or whatever, but he believed in prophylactically addressing preeclampsia. So he give them a hundred milligrams and in a thousand patients in 25 years, he never had a single case of preeclampsias and not a singles premature delivery.

Wow. That's amazing. The book is, I have a copy of one on my bookshelf. It's hard to find now. Oh, it's weird how books just kind of disappear. My book just got pulled from Amazon like two weeks ago.

What? Yeah. Long story. I think I'm being censored. Okay. So when we talk about thiamine, what is so confusing is

the forms of it. Yeah, so B vitamins are It's normally just a water-soluble form, but thiamine isn't, like…

Well, it is and… It gets confusing. Let's talk about just the various forms. I think that's a great way to go on right now is that most everybody that buys B vitamins, if you went to a health food store or even a drug store and you bought either one that just said B1 or you buy a B complex or a multiple, any one, You're going to see thiamine HCl, thiaamine hydrochloride.

And that is the typical water soluble thiumine. Okay. Then prenatals and multivitamins. Yeah, and it's okay.

Pregnancy, Preeclampsia, and Thiamine

It's ok. But what the issue is, is that it has a rate limiting capacity to absorb. Yes. So only a certain amount can be taken into the cells and a large amount will be excreted.

So, for instance, about, if you take a 50-milligram thiamine hydrochloride, you might get 10% absorption, so 5 milligrams. You make it 5 mg out of your 50. Okay.

to be is that because a lot of this berry-berry was, as I said, initially in the countries where they're consuming a lots of polished rice, Japan was really hard hit.

So in 1950s and 60s, they began to experiment to try to find something that was superior to thiamine hydrochloride because this very berry was very, very bad there.

And so the first derivative that they came up with was something called, I'm going to give you the acronym, it's called TTFD. The proper name is tetrahydroferfol disulfide, which is why we say T-T-F-D, that's a crazy one.

But what it really is, is it is just one molecule of thiamine attached to a sulfur group. And why this matters is that a lot of people think of these thiamine derivatives as like fat soluble versus water soluable.

But in fact, it's the disulfide bond that is the secret because what happens is it makes it so it needs no transport system to enter the cell. And so, what goes in by diffusion and then it increases the levels and it stays active much, much longer.

So it turns out that this TTFD was the most potent, that's the best way I can say it, the more therapeutically active form that they found. All right.

That is the form the Ecological Formulist, a company I work for, brought to America and introduced here in 1998. It is also the forum that Dr. Lonsdale used exclusively in his clinical practice.

So he had from 2000 Now from 1973 to 2013, he had what was called an independent investigator's license to clinically use TTFD in practice. And so he has to send regular reports to the FDA proving his lack of toxicity and also identifying how much it had helped people.

So this was kind of his baby. This is what he used. Now later, They introduced a form. Well, I'll jump ahead. There was a later version called solbutiamine, which not so many people have heard is now just starting to emerge.

It's also a thiamin disulfide derivative, just like TTFD, but it's two molecules of thiumin attached to a sulfur group. It's a little bit stronger, and our company went, because we recently added it to our line, so we went and looked at the package insert for where they sell it in France.

And they were promoting it specifically for fatigue, for post-viral fatigue MS-related fatigue and fatigue of unknown etiology. But the nootropic people are kind of all over sulbutiamine right now in terms of focus, clarity, you know, that kind thing.

But just like the difference between, they're very minor, but the fact that they are both disulfide derivatives means

they cross the blood-brain barrier.

That's the ticket about those. Then a third one that came later was benfotiamin. So benftimine also is an excellent derivative, But it is not a disulphide derivative.

Forms of Thiamine and How They Differ

So, there's, again, I have a study, but it is an old study from 2008, where they compared them both, and they said benfotiamin is very absorbable, you'll increase it in the blood and the liver, But we don't see it getting into the brain, because it isn't a disulfide delirium.

There's a very, very bright young functional medicine nutritionist in the UK by the name of Elliott Overton, who's doing a bang-up job right now of educating everybody on YouTube about thiamine.

He's great. And he says that he thinks that that's starting to be challenged a bit now because this study that I had was 2008, because there's some interest in benfotiamin for Alzheimer's now.

So I don't really know. I just know what I got trained in is that it was more often used, Venfotiamine, for peripheral neuropathy. And that if you're going to deal with central nervous system issues, that TTFD or Selbutiamin would make the best sense.

Now, the other thing that Elliott Overton says, is that sometimes you can combine the different forms, which is something I hadn't really thought about.

But he was saying that benfotiamin, first of all, you have to do a lot more of it, a higher dose, to be able to get where you're going with it. So I've seen him say, well, maybe if you are not getting the results you were seeing, say you up to, let's say 400 milligrams of benfatiamine, Why not add 100 milligrams to TTFT?

Got it. And kind of mix and match these forms. So yeah, as I said, there's a lot going on right now. It's great. That's exciting. Yeah, it really is. But the big thing is we want to get away from only taking thiamine hydrochloride or thionine HCl.

Yes, yeah. If you're only just taking a regular methylated, that's good. You're doing an okay job, but maybe go to more of these like fat soluble ones.

Or just the derivatives is the better way to talk about it. But one thing we'll mention about the thiamine hydrochloride, because, again, Overton has mentioned this.

He said, sometimes with your really complex patients, the people that are highly sensitive, and you've had them, right? Every integrative doctor has had these complex patient, Sometimes the derivatives are too potent to start with.

So he says sometimes he will actually begin them with thiamine hydrochloride. Got it. And then he'll begin and then double the dose and double dose. Once they can tolerate, say, three to four hundred of the thimon hydro chloride, then they'll switch them to one of their derivatives.

Okay. Especially if they haven't been on anything before. Yes. There's a role, I think, a roll of how to use it and the other book that I brought. Can you overdose on the other derivatives.

Dr. Lansdale told pretty clear that there was no toxicity, but he did talk about what he called the paradoxical reaction when you're using quote unquote high dose thiamine, right?

So he postulated that the people that need it most, when you give it to them, sometimes they'll have a paradoxical reaction where they will feel a little worse before they feel better, where there'll be more fatigue or they might get headaches, and it might go on for a few days, it could go for weeks, but he says, that this was documented from

the very beginning, from time B1 emerged, that there was this paradoxical reaction.

Now, I will point one thing out. Do you have any patients who are sulfur-sensitive that do not use TTFD or sulfatiamine? Got it. Yeah. So that's a caveat.

But in most cases, and I think Dr. Lonsdale was pretty clear, he even used TTFT ID for a while when he was over at the Cleveland Clinic. He was able to do that.

Yeah, so he used it in higher higher. Well, one more question we can do is talk about the Parkinson's real quick. So there is new emerging evidence that thiamine and Parkinson can be…

I was going to mention this other doctor. He's unfortunately passed away too, but his work is still alive and well over in Italy. This is Dr. Antonio Constantini.

His book, Parkinson and the B1 Therapy, was written by one of his patients. And so this is going to be her particular journey. But he discovered, and he, by the way, used thiamine hydrochloride, but he injected and used high, high amounts.

So he would do anywhere from one to two injections a week of the 100-milligram thiaamine-hydrochoride.

High-Dose Thiamine for Parkinsonu2019s and Closing Thoughts

Or if he used oral, he'd go as high as 2,000 to 4, 000. He was using huge, huge amounts flooding the system. But he got amazing, amazing results. And he didn't know exactly what was going on, but he thought maybe it might have something to do with a defective thiamine transport system or something.

In cases like this, this isn't like a classic thiumine deficiency. This is something else. They're more susceptible to it. Something's going on at an enzymatic level or a transporter level, or something, as to why they're not utilizing the B1.

But at the end of this book, she interviewed all… He saw, while he was living, 2,500 patients with Parkinson's. And you can go on his… The website still exists.

It's called highdosethiamin.org. Okay. And it has all the Q&As about everything you'd ever want to know about it. But this was just her personal journey.

And at the end, she interviewed a bunch of his patients and wrote what they reported. They reported both nonmotor improvement and motor symptoms. Under the non-motors category, They had great improvements with anxiety and depression and just general frustration and improved cognitive and memory, sometimes improved smell and taste.

Wow. pain, pain improvement, and then under the motor, they had improvement in their gait and their stability. And he also did videos before and after of that.

What forms were you using? Again, he only used the thiamine hydrochloride, but the high, high amounts. But then imagine if you add on some of these the other ones.

Or imagine if you'd use them instead of, you know. So there's so much to learn. This is so exciting. Yeah, it is really exciting, there is a lot more to learning.

But I'd really recommend people go on that website because just the frequently asked questions alone were really interesting because his crew over there, I shouldn't call them his group, but the people who worked with him are trying to keep this research going, you know, since he passed away.

Well, that's amazing. And I'm sure so many people listening, something will click, or they'll be able to recommend

B1 thiamine to family members or someone struggling.

So thank you so much. I would love to end with a lightning round asking you a couple questions. What is your favorite biohack that actually works? Sleep.

Yes. No one said that. Wow. Absolutely. If you could eliminate one toxin from the world today, what would it be? Oh, I think the forever chemicals. Get them out of here.

And one last thing. What is one word you would like to leave with the audience? Oh, think again about thiamine. Think. We all need to think. If you're not thinking, you need thiumine, right?

Yeah, there you go. Well, Bonnie, thank you so much. I would love for you to tell the audience where to find you, where find these awesome supplements, and once again, your love of thiaamine.

Yeah. So the company that I'm with, Ecological Formulas, and that would just be ecologicalformulas.net. And I'm just at bonnie at ecological formulas.

net as well. The books that I brought along are just available on Amazon that anyone could get and read. So I just encourage people and also, you know, take advantage of the YouTube opportunities.

Our, the product that we sell, that's TTFT, we call it Allphiamin. And then we have a version called thiamentia, which is the solbutiamine, got it, is our cute little name.

Yes, I love that. Yeah. Well, thanks again so much. I learned a lot today, so I appreciate it. Thank you. Thanks for having me.