Introduction and Guest Background

Welcome back to the conversation at the Restore Your Mitochondrial Matrix Summit. I'm your host, Laura, for Ontario. I'm bringing you experts to help you boost your energy and fix your health so you can build the life you love.

And today, my special guest is a fan favorite, Doctor Narula. Jacoby. Hi, Daryl. Welcome to the summit. Nice talking to you again, Laura. Yeah. I am so pleased to have you here because you are a world expert in Sibo gut health.

But Sibo is really where you've made your mark in the world. And this is really important to the conversation of mitochondria. So we're going to get into how, how the gut impacts mitochondria healing and what Sibo has to do with all of this.

Now you're a natural Kathak doctor and you're an internationally recognized expert on Sibo, small intestinal bacterial overgrowth. And you're the creator of the Sibo biphasic diet, which I've used in my clients in the past.

And you're, you have a resource that's helped tens of thousands of Sibo sufferers around the world. I mean, we're all using it. You're in Australia, I'm in the United States, and we use your, your, biphasic diet.

It's it's great. And you host a podcast, the Sibo doctor podcast. And your founder of the Sibo doctor, which is an online educational platform, and it has practitioner certification program as well.

And you're the medical director of Sibo test, which provides testing options for Sibo and IBS. So when it comes to Sibo, you are the resources. Sounds like.

Yeah, it's been it's been a really interesting ten years of really immersing myself in civil research and really figuring out what really works for people.

And, I also have a clinic where I see patients. So, you know, I kind of have my fingers and all sorts of different pies that are Sibo and gut related.

So, yeah, and there is a lot of connection between, systemic fatigue and digestive disorders in particular with Sibo. You know, a lot of my patients are very fatigued.

So it's a good topic, I think. Yeah, I know Sibo is such a pesky thing. You think you got it and then it comes back on people and shows up again. And so let's dig into this and really talk about what this is all about and how how we can help people.

And why would I bring a Sibo expert onto the Mitochondria Summit. So why are mitochondria important for gut health? Well, actually, let's let's start with the fact that the the small intestine, which is right under your stomach or starts after your stomach and it goes all the way to the large intestine.

The large intestine is sort of where the the majority of your microbiome is supposed to live. And your small intestine is really where you turn food that you're eating into yourself.

You're actually transforming, you know, foods that you eat into the energy that the body needs.

Why Gut Health Matters for Mitochondria

And your entire digestive tract, digestive tract has a lining of cells that if I were to take it out of your body and

stretch it out, it would be about the surface area of a double tennis court.

So it's a massive surface area that's opposed to interact with the food and digest it and absorb it. And, you know, like I said, you're absorbing your nutrients now every five days you're replacing that tennis court of cells.

And what drives that is, basically the fact that those cells like I said, are very important in interacting with your immune system in the in the microbiome and what drives the cellular replication and the cellular, where they might have Andrea, is really the fact that you replacing those cells.

So I think that mitochondrial health is really key for the gut because it requires a lot of energy to replace these cells every five days. So if you're getting really fatigued and you have leaky gut and you have digestive disorders, that kind of goes hand in hand because your body needs to prioritize the cells of the digestive tract to be replaced.

And so all that energy goes into replacing those those digestive cells. This is fascinating. You know, of all the speakers that I have on this summit, there's close to 70.

This is the first time somebody has said, oh, by the way, you replace those cells every five days. That requires a heck of a lot of cellular energy to make that happen.

Well, yeah. And think about like, I think every cell has something like 2000 mitochondria or more, right? Like there's like thousands of these mitochondria.

And if you think about how many millions of cells need to be replaced, that requires a lot of folic acid, you know, for, for DNA replication. And so it's a very nutrient intensive process.

And it needs to be healed all the time because your immune system is right underneath, that single cell layer that basically separates yourself from the outside world.

We consider the digestive tube to be actually the outside world, because you're bringing the food in and you're pulling it out the other end. Yeah. And you're in the, you know, the outside of the tube is actually you.

And that's where your immune system samples constantly, goes into the, digestive tract and just samples what you're eating and tells the immune system this is safe.

You don't have to react to this. We can use this. And so it is a super intensive process that requires a lot of mitochondrial energy. Yeah. And then even on the.

So you need mitochondria to, to repair and restore and replace cells in your gut microbiome in your intestinal tract. And then also the gut impacts mitochondrial healing.

It's so it's a kind of a relationship there. So unpack that for us. Because without gut health you don't have a healthy mitochondria either. Well, if you think about all the nutrients that are required for the mitochondria, you know, we see a lot of B vitamins and, certain cofactors of minerals that drive this, you know, this sort of chain that goes through the mitochondria.

I'm sure you've had other speakers talk about the Krebs cycle and the or the TCA cycles, different names, and it's basically redox reactions and different sort of energy that goes into this, in order to produce more energy or the ATP at the end.

So that requires a lot of nutrients. And when you have, Zebo or leaky gut or your digestion is impaired, then you're not absorbing a lot of the nutrients that you actually require for the cellular repair, processes.

So I think that's, that's one reason we see a lot of fatigue and people that have chronic, gut issues. Another reason is not so much related to mitochondria, but when you have Sibo, for example, which is a bacterial overgrowth in the small intestine, your body produces or your liver produces a protein that prevents iron absorption so that you

actually stop feeding bacteria because bacteria do feed on iron and chronic iron deficiency, which is, of course, one big one reason, big reason why particularly women have a lot of fatigue.

Because we also bleed every month, and lose a lot of iron. So replacing that iron in people, with Sibo can be really impaired. So that's another reason that I see that's very common, why people are very fatigued.

I mean, there's lots of reasons why people are fatigued. But mitochondrial repairs one of them.

Leaky Gut, Stomach Acid, and Digestive Damage

Oh well okay. So now that we've established that mitochondria is really deeply connected to your gut microbiome and that Sibo and IBS can contribute to mitochondria, your fatigue for various nutrient deficiency reasons, let's do a good definition of what is leaky gut.

Can you explain it to our audience? Sure. Like this is this, is one of my favorite topics because it's so, relevant to so many different chronic conditions that we see in our practices.

So when you think about what I said before, is that you have this single cell lining that completely covers the surface of your small intestine. And this is where, like I said, you have to actually absorb nutrients.

And we when you think about the cells, think about cells, that kind of look like Bart Simpson, they have little hairs on top. That's the microvilli. Right.

And the microvilli is there to absorb micronutrients and to also release what we call brush border enzymes, which are the last step of, of digestion, where we break down dye peptides into single amino acids and we break down fatty acids and also carbohydrates and bring them across.

So the single, you know, like sort of hair like structures are often damaged as well. But if you think about these Bart Simpson cells that are just like the head of Bart Simpson that are zipped together, right?

So if you can imagine, these are two cells that have their little hair on top and they're zipped together, with something called Sonia Lin. Right. So Sonia Lin is a structure that ensures that the passage between cells is really tight, because if anything comes across so undigested foods or, God forbid, microbes or anything, the immune system immediately sounds the alarm because it's right below, below that surface.

So leaky gut is where it's also known as, intestinal permeability is where the Bart Simpson cells have gaps in them. And so bigger molecules can come through and actually initiate an immune response.

And so all of a sudden your immune system goes, what the heck is going on? We've got all these big proteins, coming through. We've got this undigested food and inflammation ensues.

And so it's it's sort of a multisystem, process of leaky gut. Leaky gut can affect your brain function. It can affect, joints can become inflamed. We see rashes.

We see, you know, cognitive decline and or, very, confusion and brain fog. We see, systemic pain. We can see, all sorts of symptoms that you would never think to kind of associate with leaky gut.

A big one, of course, is, autoimmunity. Because why, as I just mentioned, when you have this sort of activation of your immune system, that's difficult to switch off when this process continues.

We do see a big connection between autoimmunity and leaky gut. Yeah. Now, I know that, this all starts up top when we're digesting food. Right? So this whole leaky gut situation, it begins right from the moment that we eat.

So can you talk a little bit about that? Because stomach acid is so important and nutrients are mal absorbed with low stomach acid. So can you take us into why that is so important? Yes.

And that is that is one reason why, leaky gut can occur. I mean, there's lots of other reasons, like infections or, toxicants or a massive stress when they actually, research, leaky gut.

They, they do it on marathon runners because, running a marathon is so intensive that that it just induces leaky gut. So that's just an aside and think about how many people are stressed, especially now.

The level of anxiety and stress is unparalleled in my practice. You know, in terms of there's just a baseline level of anxiety we've never seen before.

And that also impacts how you digest your food, because when you're in an anxious state, that's one of the most common reasons why stomach acid is reduced.

Because when you're in an anxious state, you're in a state called the sympathetic nervous system, which is the fight or flight, which is the opposite.

To rest and digest. Used to be that you have, you know, you take a moment, to appreciate your food. You just sit down. You have a very relaxed meal. Well, a lot of people don't do that anymore.

And, you know, have have, impaired digestion because of that salt, stomach acid. If you think about your stomach, it's supposed to be the acidity of car battery acid, right?

Between 1 and 2. That's massive. Massively acidic. That's a healthy stomach. And we have protective mechanisms to not digest our own stomach because of that.

So when you have chronic stress, are you eating on the run or you have, a genetic predisposition to lower stomach acid, then what we see is you're not really a stomach acid.

The purpose of the stomach acid is to a kill bacteria that's in the food. And we to start unraveling the big, long strands of protein, that's in our food.

And then as it passes through the stomach into the small intestine, pancreatic enzymes then act upon that, and bile acts upon that. It's this incredible symphony of perfection that helps us assimilate these nutrients and break down the food.

But let's say that that's sort of impartially done.

Main Causes of SIBO and Motility Issues

So what happens then is that bacteria break, can fermented further, and these bacteria create gases that then damage that gut wall. That's a classic scenario of Sibo.

And when that's damage, did you see the Bart Simpson cells sort of separate. And then proteins and other substances can be absorbed, including bacterial metabolites that are very inflammatory and then we see this whole cascade that I mentioned before.

Additionally, what we see is when undigested food arrives in the colon, bacteria can start to purify proteins and ferment carbohydrates. And then we start seeing ammonia build up.

We start seeing all sorts of bacterial metabolites that are quite toxic, and can also affect our, our system, particularly our brain health and and cause all sorts of mayhem.

Wow. So you mentioned there's other causes of dysbiosis as well. Can we talk about you mentioned, you know, infection and so on. Can you talk about some of the main causes of Sibo, why some people tend to have struggle with Sibo and others?

It just isn't a problem. Yeah. So Sibo for those listeners who are not familiar with Sibo, this is sort of, a subset of IBS. It's it's considered to be the most common cause of IBS or irritable bowel syndrome.

And the main reason or there I kind of categorize the causes of Sibo into four categories. Number one is anything that has to do with a normal motility of the small intestine.

So one of the protective mechanisms besides, stomach acid that kills bacteria is that we have this, what we call housekeeper wave or cleansing wave. That's part of our nervous system in our God that sweeps bacteria out of the small intestine because you don't want, you know, this precious area that's, that's meant for absorption to be cluttered up with bacterial, overgrowth.

So it has this housekeeper wave. Now, motility can be affected. Or this housekeeper wave or cleansing wave can be affected by you having, food poisoning.

So if you have food poisoning that can damage this motility, you can then maybe even if, you know, few days or weeks or months later, develop Sibo because of that, in that motility category, we also have hypothyroidism and we have other autoimmune conditions and mold toxicity and chronic viral infection that can all affect this motility.

We have also digestive deficits that can cause Sibo like cause Sibo like stomach, low stomach acid or hypochondria. I see this more in people that really have a, you know, sort of a genetic predisposition and have sort of like almost a Adria or complete lack of production of stomach acid.

That's a big one as well. And then you can have, structural issues like where you have adhesions from endometriosis causing anatomical, sort of kinks in the garden hose, if you will.

They're not inside the digestive tract, but inside the pelvic cavity that then attach to the outside of your gut and kind of pull it. And that can cause a slowdown in this digestive process.

So I'd say those are the main categories of what causes Sibo. And I think one of the main causes of relapse is really, mainly in this motility, category.

So mostly people need treatment for Sibo followed by a type of medication called pro kinetics, which resets the normal motility of the upper gut even if it's a diarrhea type Sibo or constipation type.

Seabeds. Yes, thanks for bringing that up, because the amount of bowel movement is independent of, what's happening in the small intestine. So a lot of people that have diarrhea, it's not not because you're motility in the small intestine is too much.

But because something else is, driving that. I mean, it could still be driven by Sibo, but it's independent of the motility, like peristalsis that peristaltic action in the gut, in large intestine is separate from the small intestine.

Yeah. So while we're you know, I think I really want to pick your brain about Sibo here because you are the Sibo expert on this summit. So we've established why this is why mitochondria health and gut health and Sibo are so important.

But I think we'll really serve our audience by digging into Sibo. So okay, so can we you know, you have this famous by biphasic diet. It it helps people.

It's based on low Fodmap diet. But how does your biphasic diet differ from a lot of the diets out there? And how does it help people? Yes. And we're just about like two weeks away from completely relaunching it and added lots more food.

And what what, really was the impetus for me to create this diet was in my mind, I needed a way for people to go through this journey of Sibo treatment in a very structured way.

And so, it's based on the Fodmap diet and the, also the specific carbohydrate diet and sort of all these diets together that we know are very important for gut regeneration.

And so, as the name implies, it's a diet that has two phases. And in the first phase it's quite, restrictive. It's 2 to 4 weeks where we also add in supplements that are very, healing and priming.

The Biphasic Diet and Food Choices

The gut for and back, for antimicrobials, which is the second phase. So it's really a coordinated, the process that looks at okay, first we need to completely restrict fermentable carbohydrates to bring bacterial fermentation down so that when we then move into the phase into phase two and, you know, add in these antimicrobials like oregano oil or alli, you know, garlic extract or berberine.

We already have seen some reduction in bacterial fermentation so that the die off and the damage isn't as great. And it's just been amazing to, get the feedback from practitioners like yourself and from people all over the world at how successful it has been for patients.

So it's been very, very rewarding to now come out with, 2.0 version of my basic diet. You never stop growing and creating more things and more support for people.

It's so wonderful. Thank you. Yeah, so so that biphasic diet is really, really important, what you're putting inside of your body. What I'm hearing is when you put those fermentable carbohydrates in, it's just like putting a bomb in there, and it just causes all the bloating and irritation and problems.

Well, you know. Yeah, I mean, I don't know if I would call it a bomb, maybe in the context of severe this, but but don't forget, these are really healthy foods.

A lot of the fermentable carbohydrates are not the junk we see with, with, you know, people that have just Candida, for example, that just eat a lot of processed carbs and sugar and garbage, you know, or not very good food.

But, when you look at Sibo, you like, Fodmap or fermentable carbohydrates that are in a particular category, often not very healthy food. For example, celery. We love celery, right?

But celery is quite high in these fermentable carbs. So it's actually the goal is to get to reduce these foods. And then put you through Sibo treatment and then reintroduce them because we love those foods.

We want people to have a very, very diet. And, you know, the plethora of vegetables that are, so healthy for us. I mean, my personal goal is always to eat between 5 and 10 servings of vegetables a day, right?

That, I think is, the goal of anyone who's very health conscious because we know that plants and vegetables have so many benefits to us. Not just the fibers that we need for the microbiome down below in the large intestine, but also the polyphenols and phytochemicals that interact with our cells and our immune system and our interest incredibly beneficial to us.

Absolutely. So let's switch now that we talked about food and diet. Well, actually, could I have you give us some examples of foods that are okay to eat on the biphasic diet?

Let's give people some help. What what are things that are approved by you? Yes. So, there's a lot of green vegetables that are fine. You know, certain lettuces are fine.

Kale is fine. We have different names in Australia for different products. We call things like, I think, chard is silver better? So still very healthy, but they just tend to be lower in these fermentable carbohydrates.

I mean, the biphasic diet gives you the amount of food you can eat. So, you know, green beans, I think it's ten green beans that you can have. And it gives an unlimited category of vegetables and then a category of vegetables

that you have to be a bit more careful with.

But proteins, of course, are good. You can have, all kinds of animal products. You can have eggs, vegetarians can have legumes if they sprout them first, because it turns out that the process of sprouting and activating uses up a lot of these fermentable carbohydrates and makes that, or anyone who has issues with lentils and beans should try this, and actually try to sprout those legumes first and then cook them, they become a lot more digestible for pretty much anyone, but particularly for for vegetarians.

We don't want them to neglect their protein intake. So we have a whole sprouting charts and all sorts of, resources in this handout or e-book. I should say it's an e-book.

Now, that can it really gives you guidelines as to what to eat, but also in terms of grains, initially in the phase one diet, it's, restricted. But then you can add in things like white rice and quinoa and so forth.

Of course, brown rice is a healthier option for people with non Sibo, but you need to keep the the fiber content low initially. And then as we get through Sibo treatment at the very end, we want to actually regenerate the microbiome and then fiber foods make a comeback.

Excellent, excellent. Thank you for sharing all that. Okay. So let's talk about testing. You do have a testing company and I want to make sure people know about this.

And I'm sure, I'm sure that, you have testing all over the world, not just Australia. Right? No, we're just in Australia. Yeah, we we international, but, you know, I, I just feel like we're okay with just being an Australian brand.

We don't. We?

SIBO Testing and Methane Overgrowth

I'm aware of the carbon footprint of sending test kits and things like that. So there's plenty of good testing options in America. So we have a lot of Aussies watching this summit.

So they're going to know where to get your stuff from. But also let's just talk about testing in general for the benefit of the population who spread all over the world. Then.

So you are a testing expert because you own a testing company. So what are we looking for in testing? Okay, so when we're doing a Sibo test, we can't get to the small intestine, right?

Normally when you look at the microbiome, you can do a stool test and you can get kind of get a general feel for what's happening in the large intestine, which is where your microbiome is supposed to be.

But the small intestine is very protected. So what works really well is doing breath testing and a breath test. It's very simple. Do at home, tests that you have to do, observe a specific diet, before you do the testing for about 24 hours to reduce bacterial count and then overnight fast.

And then when you wake up in the morning, you do a baseline, breath test. You basically breathe into a sample collector, and then you have a little vacuum tube that you push in on the side that collects a mid breath sample.

Then you're consuming what's essentially a prebiotic substrate like lactose or glucose or fructose. And then you're sampling your breath every, 20 minutes for three hours.

And what we're seeing is a timed sort of spike of either hydrogen or methane gas. Those are the two gases that are not produced by humans. So we know that they're bacterial, bacteria induced or fermented carbohydrates.

And then if you have a hydrogen level, there's 20 parts per million or greater or, rise of that. We within 90 to 100 minutes, we think you have Sibo or we pretty sure you have Sibo.

Methane is a bit of a different, surface or substance because methane is a very constipated gas. Now, what we know is rather than calling that C bo, I'm definitely leaning more towards calling it IMO, which is stands for intestinal mismanage and overgrowth because essentially you can have the symptoms from IMO that basically are it doesn't have to be it could, could be anywhere in the digestive tract that you have this methanogens.

So it's not necessarily in the small intestine with a thin gas. It could be coming from the large intestine. Yes. Oh, fascinating. Okay. Very good. I don't think a lot of people knew this.

This is new. Well, it's, it's, you know, it's sort of making its way into the professional world because. But in a way, treatment doesn't really change.

But methanogens have been with us for, you know, they've evolved, also in the human digestive tract. But they are what we call extremophiles. They like extreme areas in the, on the planet.

So you can find methanogens at the bottom of the darkest, deepest ocean, and you can find methanogens inside your digestive tract. But they served a purpose, right?

They were with us, when we were roaming the savanna and, pulling up tubers and very, very rough foods. And they helped us digest these fibers, because when you slow down digestion, you're able to extract more calories from your food.

And additionally, they concentrated hydrogen gas. So I never think of methanogens as the villain, but they become the villain when you know, methanogens meet the Western world.

And, and that sort of diet that, that is so fermentable. So it's, then it becomes a problem and it can cause chronic constipation. So but with methane alone, I see that less attribute or less associated with leaky gut.

I see this much more, related to fungal overgrowth and constipation. Got it, got it. Well, this has been amazing. You dropped so many pearls of information here.

So if we're, if we're, you know, kind of following the yellow brick road of everything you've just laid out for us. You've established how important energy production is based on your gut health and mitochondria health, and that exchange of energy between the cells in the gut and mitochondria and the immune system being right there and being so vital.

And then you really broke down for us, you know, start with Sibo testing. And if you're identified to have Sibo, these are the supplement. These are, you know, work with the practitioner to take supplements and specific dietary recommendations at the right time.

And if people go through all of this and they work with a practitioner and they get there, can they have success with Sibo, can they get rid of it? Oh yeah. Yes.

I mean, the and here's the thing that treating the bacteria is not hard. It's about finding out what caused it for you. That to me is always the sweet spot when I, work with people.

And for some people, it's really about looking at your lifestyle. If you're somebody who just really has no downtime or you are very stressed out and you're, you know, you have a lot of, stress in your life, that's a big factor.

Treatment Success, Gut Energy, and Resources

And that, I think across the board makes, makes any treatment of any condition that much harder because your, your whole nervous system is primed to run away from this perceived threat.

And it just makes it very difficult or not difficult. But it's you have to do a lot of work on the nervous system. So I will say that, but treating the bacteria itself is not that hard.

You know, the only thing I also want to mention about, energy that's derived, we get about 20% of our daily energy, not from our mitochondria, but from our microbiome, because they produce short chain fatty acids.

So this ferment, you know, when when microbiome actually ferments fibers in the right place, that is where you want it. They produce something called butyric acid, propionic acid and acetate.

And those three, are short chain fatty acids and particularly butyrate 20% of your energy comes from that per day. Thank you for making sure to say that.

That's really important for our audience to know. And this is why gut health and mitochondria go hand in hand and are so vital as well. So this is then amazing. You're always amazing rally.

You're so full of information. Any last words for our audience before we wrap up and tell everybody where to find you? Oh, I mean, you know, I think that if you have digestive issues and you haven't really explored that as part of your, investigation as to why your brain fogged or fatigued and you have, you know, if you've kind of put up with things like, having a lot of gas and bloating and you think that's just normal for you, you might want to reconsider that and and think and connect these to conditions that your gut health may really be, what's what's causing your fatigue and particularly brain fog.

You know, brain fog is a big one. When it comes to digestive issues. For sure, for sure. Tell us where we can find you. Where can people get a hold of the biphasic diet?

Whether you're in the US, Canada, Australia, Europe, no matter where you're at. Thank you. So my education website is called the Sibo doctors or Sibo doctor, but because of that front, that's where you can find the biphasic diet.

And I have patient courses called the Sibo Success Plan. I have practitioner courses called the Sibo Mastery Plan and others. And we're just about to launch also the supplement protocol that goes along with it and a membership, platform where people can get a bit more support through this journey.

I have a clinic called the Biome Clinic where I work with, about five other practitioners that I've trained in the art and craft of Sibo treatment. So it's called the Biome Clinic is we're love the goddess.

We we, you know, we are absolutely convinced that God health is the foundation and the root of the tree. If the root of the tree is not healthy, the rest of the body cannot be healthy.

That's our sort of motto. So we work with a lot of people all across the world via zoom. And yes, my testing services called Sibo test. And that's here in Australia.

Fantastic. And because you work with people across the world via zoom, I'm assuming if they get a Sibo test in their own country, you can help them. Yes. Yep.

Yes. Sure. That's the biome icon. Yes. So great. So great. Thank you so much for sharing your wisdom with us today. Being such an advocate for healthy microbiome.

Thank you, Laura, and wishing every best of luck to everyone reclaiming their energy. That's right. You take good care, Nuala. Bye now. Bye.