Spike Protein, Immune Exhaustion, and the Peptide Response Transcript

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Introduction and Guest Background

It is my great pleasure to introduce our next guest, a physician who stands at the very vanguard of systems biology and precision longevity. Doctor Robin Rose is a double board certified specialist in gastroenterology and internal medicine, who has devoted much of her career to decoding the complex dialog between the human gut microbiome and the systems that govern how long and how well we live.

As the founder and CEO of Terrain Health, doctor Rose has moved beyond the limits of traditional sick care medicine to pioneer a next generation model of precision health, one that treats the body not as a collection of symptoms but as a high performance ecosystem, a leading global authority on the gut brain immune axis.

She specializes in resolving complex chronic conditions, including long Covid. She brings together her foundations and neuroscience at Lehigh, Neuropsychology at NYU, and gastroenterology at Beth Israel Medical Center.

With the cutting edge of regenerative medicine giving her patients a sophisticated roadmap to optimal gut health, hormone balance, cardiovascular resilience, and neuroprotection so that they can look, feel and perform at their biological peak.

That transformative approach is captured in her definitive guide to gut restoration, the 28 day Gut fix, and her mission is a singular one to bridge the gap between breakthrough science and the pursuit of a radical, optimized health span.

Now you're going to need a pen, paper, and possibly some research tools for this interview, folks. This is a deep dive into spike protein and what it is possibly doing to our physiology.

It's an extension of an interview that I did with doctor Rose for The Longevity Podcast earlier this summer. You can go to that for a lot more detail and more deep dive.

Here we do talk some about how and when and where doctor Rose will sometimes weave peptides into her treatment or work with patients with these conditions.

So please join me in welcoming the brilliant doctor Robin Rose. Doctor Robin rose, welcome to the summit. Thank you for having me, Nat. It's a pleasure.

And welcome to everybody to this episode of the Bioregulator and Peptides Summit. You guys have maybe have heard of Robin Rose, and you may notice, I don't know if this is going to be the first doctor Robin Rose might interview or the second Doctor Robin Rose summit interview.

But there are two Doctor Robin Rose's, one of whom lives far, far away in Hawaii and specializes in CKD, chronic kidney disease. And this Robin Rose, who is very much not far, far, far away unless you live in Hawaii and she specializes in really well, I think it's in this post-Covid world you, your specialty has evolved into.

Post-Covid Immune Dysregulation

And I don't know what it was before this, but really you're you're sounding the alarm and helping people with this immune dysregulation that has evolved out of the pandemic.

Am I saying that right? Or gut immune brain access. What have you. The whole thing. That's right. So so so folks, if you want a deep dive, there's an episode of my podcast longevity with Nathalie Niddam with doctor Rose earlier this year where we really kind of dove deep into this whole issue.

What we really wanted to do for this, for the summit is come here, give you guys a bit of a snapshot of this whole immune dysregulation that Doctor Rose's observing clinically.

And then we are going to talk a little bit about where the peptides can fit in in addressing some of these issues. Now I just want to preface it by saying this isn't going to be a just do six weeks of BPC in five weeks of CFPB, and you're good to go.

So doctor Rose is going to unpack some of the complexities of this for us. But it's at least going to give you a place to start from. And an idea of this is for you.

If so doctor Rose, I'm going to stop talking now and let you talk, because that's what people are here for, to hear you. Not me. Okay. Well, doing wanted to ask me the first question.

The first question. The first. The first question is what's changed, right? Like, what are you seeing clinically? What have you. You know, you're basically pounding the pavement right now talking about this topic.

What have you seen happening since the pandemic? We all thought, okay, you know what? Fine. We're done. It's over. And it's and for so many people, it's not.

So what is it that you're seeing that's just not so not over. Yeah. So I think and I feel like you were the one that helped me tag this line. But it's really looking at immunity for longevity.

Right. So beautifully put. Yeah. We you know, there's the term herd immunity. Yeah. That was who's one of my men. You know my mentor who I worked with for the last bunch of years.

Like he terms he coined it herd immunodeficiency or I just call it hurt. Yeah. Immunity hurt immunity. And so we are now left with this exhausted immune system because of what exposure to Covid and the spike protein is done.

And because it was the beast of all diseases that we've seen ever in our lifetime or possibly in many lifetimes. And we are left now with all patients of all ages, specifically the working class.

Unfortunately, with immune systems that don't function the way they should be because of several factors significant mitochondrial dysregulation dysfunction, a severely broken gut microbiome because of the way that the virus behaves and it can live inside our bacteria in our gut for months, if not years.

Circulating spike protein that can stay inside ourselves for months, if not years, and all of the downstream factors that occur as a result of this disease harboring and smoldering inside of us.

And so now we are left with a very, very sick population and not just a sick old population, a sick young population. And this is data that can be easily extrapolated from the CDC.

And we can see not only looking at cancer rates, a cardiac, cardiovascular disease, neurodegenerative diseases, liver disease, kidney disease, cancer, several different types of cancers, but also the disability rates.

We are a sicker nation. Prior to the pandemic for prior to even January 2021. For decades prior, the disability curve looked like this. It was flat. It was a little noise in it, like any statistician would expect, but it has been on an upward 4560 degree angle ever since January 2021, even up until now, really.

And that is mostly in the working class population of like 18 to 50 years old. Why? So why do you think that is? Because Covid is an age accelerant. The spike protein is an age accelerant, and we're aging way faster than we would have if we were never exposed to this virus or the spike protein or this disease, unfortunately.

And and so and so if somebody. Yeah. So if somebody listening to this and they feel fine, what would you say to them. Yeah. So I you know so we get worried while patients all the time and you know, or people that just come in for health optimization and I still screen them, I still look at all of these different biomarkers and different analytes.

Because when you practice, you know, functional integrative medicine, you're looking to avert the crisis. Right? So that's what differently. I mean, think about it, Nathalie, when you go or at least in the United States, when my patients go see their regular primary care doctor, there may be drawing maybe 40 analytes, if that.

They don't even check an insulin level. Right. Like your insulin goes up before anything else. Like, people have small smoldering insulin resistance. You know how many people you can save from diabetes?

I mean, it's ridiculous, right? So in cardiovascular disease and all these other things that are driven when you that are driven by inflammation and when you have, you know, insulin, glucose dysregulation that's just even smoldering or that's just starting.

Right. Yeah. Yeah. Think about it.

Symptoms and Clinical Presentation

So I am screening people for these baseline neuro inflammatory biomarkers, cardiovascular biomarkers thyroid kidney I'm looking at you know immune biomarkers that normally we wouldn't look at.

And I'm seeing a significant amount of abnormalities in those in even people that come in presumably healthy or that don't have or think they have post-Covid conditions that have, you know, major abnormalities on their blood work.

And guess what? We can fix that. We can change the trajectory of that person's, you know, health. So that's what I'm doing. And, you know, you ask me, what am I seeing in my practice?

I mean, I'm seeing patients like sicker patients than I've ever seen in my life. Like, ever. I'm seeing young patients, young like adolescents, like late teens, early 20s with like that are so sick, like.

And that were completely healthy, you know, like, had no issues, never had problems before. People that even just had like mild medical issues with just like a slew of medical problems now, a slew of different signs and symptoms.

And, you know, I speak, you know, I speak all over the country and even in some other places around the world, and the amount of people that get up to ask questions after I speak and the amount like their jaws are just like open and dropped and they're like, this is like the missing piece that I was looking for.

I'm seeing what you're saying, but I couldn't fill in the blank. You know, where I was, like, missing that last piece of the puzzle. So now they have a better understanding, like, oh, this makes sense.

This is what I'm seeing. You know, my patients are getting Covid still two, three times a year, but we don't test anymore because nobody cares, right?

And I get that you have fatigue from it, right? It's like, oh like getting the flu. But it's actually not like getting the flu because even the newer variants, Nathalie, like the newer Omicron variants that are not virulent, that are not pathogenic like the older ones.

Right. And what they do at a cellular level. And there's studies and I show these in my talks that show compared to the older variants, what the newer Omicron variants do and how they have such a much higher affinity for certain receptors on the cardiomyocytes and certain receptors on our glycolysis and certain receptors on the endothelium and certain receptors in our brain cells, and so on and so forth.

So what it's doing at a cellular level, right? And not dealing with that or not trying to be proactive about that is what's killing us slowly. And it being sorry, it being the spike protein.

Because the spike protein is the constant spike protein called the persistent virus, or the number of those that we've proven in our lab in, in, out, in, you know, in Europe, in Italy that the back, the bacteriophages, the bacteria

produced by protein, there is spike protein from bacterial origin, not just from human or, you know, eukaryotic cell origin, but from bacterial prokaryotic origin.

We can show that from mass spec. So there's an ongoing production or, you know, factory making production of these spike proteins. And so yeah, it's problematic, but it's, you know, driven by persistent virus itself or what that virus is doing to even the bacteria in our gut microbiome.

So. Right. So I remember this from the last. So basically it's hijacking bacteria in the biome and turning them into it's like right out of a harness.

Not even just the back, not even just spike proteins. But they this is very well documented. And study two by Bruna and and Kristen's group in in Italy they're making toxin like peptides which are venom mimetic which, which are mimicking, you know, snake snake venom and sea snail venom and all these different types of and many of which are very, very toxic to the central nervous system, the autonomic nervous system, all these different things.

So that's just another layer of damage. And why we see the symptomatology that we see in many of the patients. And that's why so many doctors are just like, I don't know what to do.

Like, I don't know what's wrong with you or it's all in your head or this it's not in their head like they're really, really ill. And it's one of the most debilitating, complex diseases of our time, you know?

And so yeah, about it or know how to deal with it. So you mentioned that some of the things that these toxin like peptides, some of the effects are paralyzing mitochondria, dysregulated ion channels, degrading the extracellular matrix and driving all these different issues.

And so and mitochondria is all it's I mean, rightfully so. We're finally we're finally getting with the program that it's all about the mitochondria. Right.

Like because if you can well I mean 100% and the mitochondria are so significantly dysregulated and there's so much mitochondrial dysfunction that, you know, you have to concentrate on the mitochondria, because even if you try to address the immune exhaustion, right.

And the immune failure that we're seeing, you can't make T cells on a broken electron transport chain, right. Like you just can't. So if the mitochondria, whether it's a qualitative or a quantitative problem, right, which we have to address both things in these patients, you're not the patients are ultimately not going to get better.

Right. So because these interviews are shorter than we're used to and we don't have we're not going to be able to be here in an hour and a half deep diving.

And I'm not chatting with my Nathalie. And I love chatting with my Robin, but I just want I want this to be a little bit like a cheat sheet for a whole bunch of levels for people.

So that number one. How do you and and I know you're seeing this even in people that are coming in for, you know, they're coming. They think they're fine. Right.

And, and and they and for whatever reason, their body is dealing with it better than the person who's dragging themselves in the door because of their, you know, it's epigenetics, it's genetics.

It's, you know, you know, they detox better. They get rid of things better. Their lymphatics, their kidneys, their liver work better. Like there's just all these different things, right? Right.

Like. Right. I mean, I can't I can sit here for ten minutes and name off all those things, but yeah, there's a million reasons why somebody handling it better than somebody else.

Right. So. So how does someone know that this is an issue for them? Like if and let's put aside the healthy person,

the the person who presents is healthy, let's put that person aside, because that person will benefit from the type of screening that you do, because that is part of your intake at this stage of the game, as a medical doctor, you're like, I'm until you show me.

Otherwise. My assumption is that there's some impact of this virus on every person that walks through my door until pretty much pretty much. Yeah, but but for someone who's listening to this, who's been trying to explain to their doctor what's wrong with them, like, let's describe some of the some of the symptoms that they're experiencing that are so amorphous and that nobody can seem to put a pin in, like nobody can put a finger on it.

So, you know, I just even saw a 30 year old patient, a 30 year old male patient like a few hours ago today. And, you know, he's an AI tech guy. Whatever. He's brilliant.

And, you know, he's been suffering with this for almost two years and no one's really been able to help him. And he's had some success with each bot and this and that.

But like, nobody's getting to the root cause, right? And no one's necessarily said to him like, oh, this isn't long Covid. They've agreed that like it, you know, the symptoms manifested after his second acute episode of Covid.

Right. But the point is, is that the bigger symptoms, the most common symptoms that a lot of people experience are the neurological symptoms or the neuropsychiatric symptoms.

So the brain fog, the you know, the memory, short term long term memory, word recall, face recall, name recall like all those different things, right.

Like not being able to think as sharply or to hold or to concentrate as long like all. And this is and this is forget about him. Right. I have patients coming in every day telling me this.

And a lot of women like even in there, they're like, oh, it's like it's paramount opposites. My hormones. No. Yeah. Not necessarily. Right.

Testing and Biomarkers

Like like why. Oh. So now it's a, it's an epidemic of brain fog. Like, you know what I mean? Like, every woman that's menopausal is brain fog. No, that's not true. That wasn't like that before.

Before this happened, you know, so and then, you know, and I mean, yes, men go through Andrew pause. And they have their things too. But yeah, men like all of these like younger people, like in their 20s and 30s and, you know, middle aged patients like having this problem.

Right? That's like a big problem. So that's one of the most things that if you can't figure out why you're feeling like this, you should be worked up properly, right?

You you should be you should be thinking about this. You likely this could have started and it came on all of a sudden after you had some viral illness, like nine out of ten times.

When I asked the patient, oh yeah, I had a really bad cold, or I had a really bad upper respiratory infection, or I had a flu like thing and they didn't test for Covid, or maybe they did, you know what I mean?

Like, but whatever, it didn't matter. At some point it got to the point where nobody even bothered anymore, like, you know, like and that's fine, you know, but there's a temporal relationship between usually this physical stressor and illness or whatever.

Right. And then what? And then what. Okay. So let's I don't want to dress okay. So so that's one. Right. And this debilitating debilitating chronic fatigue and malaise are not being able to have the energy that you used to have, like not being able to get through the whole day with that energy that you're used to having or hitting a wall or like

hitting a brick wall by 2:00 and the need to have to nap.

I'm just trying to get like really simple here. Yeah. No. That's great. And like, you know, this post exertional malaise. Like, well, I had a few great days and I was able to push myself, but then I collapsed day four. Right.

Because because of this relapsing remitting mitochondrial dysfunction that I always talk about, because you only have so many mitochondrial and you have only have so many, well, working ones, and then you just lose them up and you're done. Right.

Because run out of juice completely. All these other cofactors of nad whatever. We won't get into all the science and the nitty gritty, but that's driving a lot of all this and things like that, right.

So like, you know, the nad drain and you know, doctor, Europe is all about that. Like it's very it's so clear as day and so that those are, those are huge symptoms right there.

Like the fatigue the brain like classic those triad post exertional maze like so huge. Right. And then you got then you start getting into people that have like just these chronic headaches and head pressure like this, this constant pressure or like a band like sensation around their head.

And this, you know, chronic neck pain or neuropathy and tingling, twitching fasciculus. Right. People, young people like we the amount that like, you know, presenting with arrhythmias, you know, like or an arrhythmia induced heart attack, you know, like all these weird things, right?

Like, it's not even like coronary artery disease per se hasn't gone up. It's these other types of cardiovascular disease because of what the spike protein does.

Right. So so these things that like you wouldn't normally see, you know, like these rare crazy autoimmune disease, these mast cell activation types and these this autonomic symptoms, the disorder like just like all of a sudden my heart's racing I don't know why blood pressure is going up.

Like all the things that your body automatically does, but now it's not doing it the right way. It's just doing it when it wants to do it. Because the autonomic nervous system is so sensitive and is so easily taken out by the spike protein, or by the auto antibodies or the inflammation, the there's this big inflammatory component that's impacting the the nervous system and those nerves.

Right. Like that, you know, are responsible for this for our autonomic nervous system and how it functions optimally. So there's so you know, yeah, the mass of it like there's just so many things I can.

But those are your main, main players. Like why did this happen to me. Like why like why was my cancer in remission for ten years. And then I got Covid and like a few months later like now I have stage for whatever, blah, blah blah cancer.

You know, he's aggressive, very aggressive cancers that are coming out of nowhere. You know, whether it was a recurrence or it's like a new cancer and, God, kidney disease like I've never seen before, chronic kidney disease in young people to like I will tell if there's any, you know, healthcare providers listening to this like start checking to statin sees.

You're going to even see people. You know, we're usually used to checking this as that and see, because the creatinine is elevated and we know the creatinine is not that accurate for many reasons.

You know, for muscle mass people taking creatine like all those things. But we're now seeing a paradoxical change where we're seeing low creatinine and a high system and see.

Right. And that's because there's a micro angioplasty. These the micro clots that are generated from the from the low grade endothelial right that is occurring in many of us at a low grade level.

You know those clots are getting in to, you know, the blood whatever. What's supplying the kidneys right. Yeah. The blood supply what's perfused the kidneys.

And now you're getting like microvascular damage to the kidneys, right. That are very delicate. And I'm seeing patients with stage two chronic kidney disease like I've never seen before.

GF's are going down and seas are up. And, you know, in this patient population too, like, you know, the creatinine is low too because they're a little bit more tending to be sarcopenia, you know, because they're not able to move the way they used to move.

And they can't build the muscle mass. And they don't have that like sort of like metabolic security blanket that they used to. So anyway, so this is these are the things that you have to start looking at and seeing.

And you're going to be like, Holy shit, she's right. Like, I can't believe I'm seeing this. Yeah. No. Okay. So you mentioned looking at immune markers earlier.

So how do people test. Right. Because again like I'm going through how do we how are people presenting now. How are we testing. And I know testing is a sore point, but what are some of the tests that people.

Yeah. So if people are sick and people are having these types of symptoms like, you know, you definitely you want to get a lymphocyte panel on them and a cytokine 13 panel on them.

You want to see, although I think at this point so far into the pandemic, although unless you're getting a newly a new patient, like a patient that's presenting brand new, you'll see some elevations in the cytokines, you know, and I still see them, but not as much.

I think at this point it's like almost like they're burnt out, you know.

Peptides and Gut Repair

But the lymphocytes tell a story like, you know, your Cd19, your CD4, your CD. It's like all your natural killer cells. They tell a nice little story.

And so, you know, following that and regaining immune resilience, you know, by introducing certain treatments that we'll get into are really good because you want you need you need to you need to restore, you know, health and balance to the immune system.

But you got to do it in the right in the stepwise fashion, of course. But yes, like all these things are really important. But doing a lymphocyte panel, the neuro inflammatory biomarkers like your a beta 42 £0.40 tau two £0.17 tau 181 Nora filament light chain g fat glial February acidic protein.

Like I always get those. Those are super helpful, especially in my young patients when I see them going up. God, the first thing I want to do is do everything I can to drive those back down.

I would you do that with different treatments that are going to support neuroinflammation like certain tides, plasma and other basic vitamins like omegas and things like that.

But you know, and we can get more into that as well. But, you know, certain IVs that we use the clinic, ozone therapies. Fantastic. You know, things like that. Yeah.

What about okay. So so more so a few other biomarkers. D-dimer I like I mean 70% of my patients have an elevated D-dimer. Like whether it's insane. And normally if I had like you can also the diver will go up pretty.

It's a pretty good marker if you've had recent infection too. Okay. Really. You know, and and the dimer doesn't have to be positive for you to have micro clots and vice versa.

You know, like, you know, like the diverge just that one minute in time. So if you're if you're making those five or in split products at that moment when I took your blood, that's great.

Right. But maybe you weren't, but you still can have micro cloths that are 3.5 out of 4 or 4 out of four, you know. But I like the dimer as just a screen, because if you see a dimer and you're like, that's not normal, why is your D-dimer 1.2 like that's so abnormal, you know.

Right. Right. And you know me always talk about that. You always talk about TGF beta one transformer transforming growth factor beta one because it's a multifunctional cytokine that really was ever rarely like elevated prior to the pandemic, except for like mold toxicity or maybe like after like, you know, it would go up after acute viral illness and come right back down.

But God, it's just massively elevated now for years and patients. And so driving that back down. Right. Because we know TGF beta one is good initially for things right because of its properties.

But then when you when the when it's elevated for such a long period of time, you're going to start getting scarring fibrosis like all these terrible things that you don't want or need.

Right. So that's a really important want to focus on and focus like driving that down. And there's lots of peptides that help with that like GHQ and Thymus and Beta four.

But you know, you'd be using those for other reasons. But it was needed glycerin which I love. Oji. The Japanese published a study how it drives down to 81, which is like a great, safe, easy thing to use as well.

How do you use ozone? Glycerin? It's a liquid form. Is it world? Yeah. Yeah, I have it here. It's not sitting on my desk. Yeah it's well it comes in capsules like glass native.

Like which. Oh yeah. Because the capsules get into your lower bowel because ozone to glycerin is when you give it, when you take it orally in the liquid form, it gets absorbed in the first part of the duodenum.

So it's going to go systemic, which is great because I love it I love it systemic effects obviously, and it crosses the blood brain barrier and all that stuff.

Nebulizer it with or without DMSO is great also, especially for my neurodegenerative patients or my patients with significant or Nora inflammation or neuro symptoms that been great.

And then the capsules I've been using to treat the bacteriophages in the gut, because those people are going to get into the intestine, the larger intestine.

And so I've been trying I was trying to do a study around that, but it's been sort of hard because I've been so busy. So if anyone wants to fund me for a nurse, I'd be more than happy to take them up on that offer. I'm just kidding.

But yeah. So we're using that to, you know, see what's going on. Yeah. So native glycerin. So this is a bio regulator and peptide summit. So why don't we talk a tiny bit before we run out of time about where the peptides fit into the picture.

Because you've mentioned a couple already and you know, as everybody at the summit understands now the FDA had their heaters in July. Well, you just not not a whole heck of a lot has changed, unfortunately, other than the fact that six peptides are I mean, they're still in the they're one step closer.

They got approved to move to the back to to the next level, but they're not going there yet until there's a few more steps. Exactly. But it was a few steps.

But it was a positive. It would definitely moving in a positive direction 100%. And a few of the peptides we're going to talk about today were on the on that list.

So let's talk a little bit about those peptides shall we. Sure. And where do they fit in. Okay. So BPC 157. Yeah. Which is crazy that it's one of your tools here.

Talk to us a little bit about how I look. 157 first of all, for its global like sort of systemic inflammatory effects that it will have. And if you read there are studies, you know, decent studies showing that BPC like obviously not human studies, but showing that it can help in, you know, especially with patients with peripheral neuropathy.

And so a lot of my patients have peripheral nervous system issues and obviously global inflammatory issues. And I like to cycle it on and off. You know, as part of like my regimen that I do, you know, like I I'll use thymus and alpha one, you know sometimes thymus and beta for BPC 157 and I'll cycle on and off these during the treatment, but we can get them to more.

But and also I like BPC 157 and I use it in combination with CFPB. CFPB was approved.

Mitochondrial and Immune Support

And CFPB is a natural TNF alpha blocker TNF alpha is an inflammatory cytokines that goes up, you know, post-Covid, during Covid, post-Covid it's a cytokine that's secreted in the gut particularly.

So it's going to help again with lowering gut inflammation in combination with the BBC 157, which is going to help with the tight junctions and helping with that leaky gut.

So that's like part of our when I'm using it after I get after I've tried to clear out the bacteriophages, I'm using the CFPB, BPC 157 as part of a protocol that helps with restoring health and balance of the gut and the gut, so that I use La Raza.

Tide wasn't on the list. I don't think La Raza tied. It is technically available commercially. Yeah. Because isn't it isn't it doesn't it belong to a pharma company?

Well, it's all yeah. Or like, you know, but it's thousand dollars. Whatever. But the compounding pharmacies make it, and it's a beautiful, beautiful drug and I trust it from our confounders obviously.

And it's much cheaper. It's like a few hundred versus a few thousand dollars. And it's fantastic. It's a potent zonal and inhibitor. And it is great for helping with healing the leaky gut.

And that's what I need to do, because I need to stop all those nasty, you know, antigens and inflammatory cytokines and what have you. Let's leaking out of the gut into the systemic circulation.

So that's something I'm using up front to. So we've got KPC one in the gut. La Raza tight in the gut for sure. I'm using BPC 157 systemically as well because I do think it helps with some.

Again, like just like overall inflammation, some of the patients that have this neuropathy type thing going on and things like that. Let's move to immune exhaustion and mitochondrial dysfunction.

So the problem is is sure. Is there a quantitative issue. Likely. Right. But more likely there's a qualitative issue right, with the mitochondria. Because we know that the spike protein and studies show this to that it's going to interfere with cardio light.

It has a negative impact on cardio been. And so so you know you need cardio like Ben for the you know inner mitochondrial membrane. And to make those your here I have a little picture of it.

You're Chris day right. So you know so you want to have as much surface area as possible right. So you can make ATP you know your electron transport chain makes ATP.

What happens is as we get older right. Our mitochondria look more like this. Right. So we don't have as many of

these little folds in our in our Chris De.

And it's because we lose cardio light. Ben. And that's happening in the context of Covid long Covid two. Right. We have this loss of the inner mitochondrial membrane, Chris.

And you know, so on and so forth. So that's that's like right, that's a qualitative issue. It's a structural issue okay. Right. And so if you don't have that Christy there and you don't have enough electron transfer chains to make ATP, and so then you're not going to be able to do all the other things.

Right. So you know, we figured out like you know, because we were dosing it and I was working with like Leonard Pastrana from new from, you know, progress and new bio agent and Elizabeth youth and Doctor Earth.

And we were trying to figure out, you know, based on the mitochondrial myopathy studies, they were using very high doses. So we were trying to get away with using lower doses in the long Covid patients, like way low doses.

Like I don't even remember what we were giving like 12mg. I don't even remember, but we had to go up to 20mg twice a day. Like that's a big dose. Yeah, we're of SS 31. I'm so sorry.

Yeah. Okay. I thought you were talking about a 20mg. Wow. That's huge. Twice a day, twice a day. So we were trying to go to 20mg twice a day for six weeks.

I mean, for some people, that's not even if they probably need 8 to 12 weeks of 20 minutes, if you really want it to move the needle and then you would then, you know, maybe put them on like some maintenance dose of like 6 to 12mg a day or something like that, right.

The problem is, is like not as many people really can afford it. It's very, very it's going to say it's prohibitively expensive, very expensive. So I have some patients that are so sick, whatever, they'll do it, you know.

And then obviously we're doing other natural ways to support cardio like Ben, you know, and then give them Midas conjugal support, you know, with certain medications and supplements in the mean.

You know, if that doesn't work, you know, you want to talk about just talk about a couple of the alternatives. Just what are the couple of the like, you know, acetal carnitine, alpha lipoic acid, you know, all your B's, magnesium, NAC, glutathione, like all those different things.

So not so not even fancy stuff, just foundational nutrients to help the inner membrane of the mitochondria to recover. Yeah. Or things that I think I had looked up natural.

I think I want to say like curcumin also helps with cardio. What about that are super helpful as well. Yeah. Or or what about the PC oil. Like my body.

Yeah, yeah. Oh yeah I'm sorry PC yes I love PC. Just for the cell. For your cellular membrane health. Yeah we do a lot of IV phosphatidylcholine in the clinic.

Essential I love it. But yeah. So you know just doing that. And then I have this mitochondrial support drink I do that's like ISIL water, which is like, you know, I'm drinking I have that.

Yeah. You know, that has like a few, you know, I mean like really important amino acids like like glutamine, glycine, leucine. And then with which with a free teen.

Yeah. And it creates a cellular gradient where it causes intracellular swelling because when people are chronically ill like this and have all this inflammation, your cells are really tiny and shrunk up.

So this will swell the cell. Right. And that way you can improve mitochondrial fission. And also, you know, protein synthesis and things like that. And things can work a little bit better.

So anyway and then, you know, I and then I use things like I'll add that where is the third generation like after Arterial and Calyx Pro to help with the glycol calyx.

And that's going to help with the micro circulation. Right. And that like repair of the glycol calyx that I told you is so devastated in this disease process, you know, helping with like red blood cell deformable and making the blood less viscous and things like that.

And we use drugs like pentoxide filing for that will also aid with that. And also flows in which is an STL two inhibitor, is really great for helping like with the micro clots in different pathways.

It's really it, you know, five of the six different pathways that I've mapped out, it helps with. So giving a combination of those things can be super duper helpful.

I don't want to forget about LDN like nobody's no. Truxtun is hugely usually important for both helping with toll like receptor. The you know you know like helping enhance like the TLR.

I think it's TLR two and also natural killer cells priming. Yeah I think it helps with that. I don't remember every mechanism off the top of my head. Well, no, LDN was one of these crazy repurposed drugs, right?

That just seems to help with so much stuff. Yeah, yeah. I mean, it's like a baseline for so many of my patients because of, like, how helpful it is with all these different arms, especially with the like, lowering all these different inflammatory cytokines.

It really like, you know, in the fibromyalgia studies, it has like, you know, a global impact on lowering all these different cytokines, you know, pro-inflammatory cytokines.

And then what it's doing to, again, to certain toll like receptor cells and T cells and NK cells and things like that. The thymus gland is also significantly impacted by the spike protein and Covid.

So as we get older. But isn't it gone anyway? Don't isn't our time is going to be so like right? So as we get older, our time is Glenn and balloons, right?

Yeah. And so that's why in the longevity space like you'll see like very astute doctors, you know, basically cycling thymus and Alpha one and thymus and beta four and all those things.

Right. But the spike protein accelerates thymic involution in the young. And that is why you're seeing. So all these patients get sick like we've never seen before, these young patients that are getting influenza A and influenza B within a month of each other or within like two weeks of each other.

SV in the young middle aged population. Right? Opportunistic diseases that are up 13.5 times, like certain Candida infections and fungal infections that we've never seen before, right at this point.

Resistant strep A okay, up 800% in the UK, up 400% in the United States. Our bodies have become petri dishes for these normal bugs that we've used, that we've had antibody response or like adaptive immunity.

And we were not able to kick that in anymore. And it's because of our T regulatory cells. And we don't have that T cell education that we need coming from the thymus.

Then especially in patients that still have some left or right. Yeah. So the point is, is that I love thymus and Alpha one for these reasons to restore T cell education or T regulatory cells to bring that balance back the Th1 Th2 balance to where it needs to be.

Right. Because that's what's driving a lot of the disease that we're seeing in patients like the 30 year old patient that I saw today, he's like, I get sick all the time.

He's like, I never used to get sick. He's like, I get I have some really horrible sickness every three months at least. He's like, I used to get sick.

So it's an immune system that's really just gone down. Like the immune system just can't function. And I think a lot of doctors may argue and be like, well, when I do the lymphocyte panel, it's normal.

But remember, I'm not necessarily saying it's a quantitative problem. It's a qualitative problem. Right?

Microdosing GLP-1s and Closing Remarks

Your numbers might look normal, but qualitatively you don't have the same functioning T cells and B cells that you did, you know prior to maybe being exposed.

So you know so I love cycling. You know many of my patients with thymus and Alpha one like I'll have them on like a daily dose, you know for 12 weeks.

Then maybe for six weeks I'll put them to three times a day, you know, because obviously it's always cost prohibitive to, to a certain degree. And then I'll cycle them off, maybe for only like 4 to 6 weeks, and then I get them back on because I really it really helps in the, you know, obviously in conjunction with the other treatments I'm giving, I need to keep these patients immune resilience up, like they have to have fantastic immune resilience, because every time they get hit and it doesn't have to be Covid with another viral illness, they take a huge step backwards and they slip.

So they have to be maintaining and have to be cycling these peptides, doing maintenance. IV they're like all the things, you know, to keep their immune resilience right where it needs to be so that they don't slip back.

Because really any physical, mental or emotional stressor like they, they, they slip. That sets them back. Yeah, yeah. So what do you think the world would have been like if you didn't have peptides in your arsenal?

Yeah. So have you thought of that? Because, I mean, the last thing I didn't even mention was the neuropeptide. I use a lot of cerebral asset I love, which is harder and harder to get like part of many of my IV stacks.

And I have wonderful results with that too. I love it and I use it in conjunction with poly MVA. I stack it after some of my therapies. I give it whatever.

Like I have all different stocks that I've created, but that are super helpful for the patients. But that's another great peptide I love. But what would I do without peptides?

I mean, I guess it might just take a lot longer to get the patients better. And I also think that I'd have a lot more patients, you know, relapsing if I did them.

Yeah. So I think that they played a huge role in conjunction with other therapies. Again, nothing's a panacea. Nothing's a one size fits all. Like this is what you're taking. That's it.

But they are so fantastic when used the right way and the right patient, you know, with the right formula. They're really just so beautiful. And they've been so helpful for so many of my patients.

So I'm so thankful that I've been opened up to the world of peptides that I've been able to use them, experience them with my patients. You know, the other preps I didn't imagine too.

I use GI microdosing GLP ones in my long, you know, certain pain pathways that are really important in these patients. They I forget which complex three I think it is like in the electron transport chain, they play a role there.

So there's just like a lot of cool things that the GLP ones are great for. And microdosing that might have found has been also a huge game changer in my patients.

Okay, so before we close, just define for us microdosing gloves because oh say nope, that's okay. I'm only saying that because people walk around talking about a starting dose being like low dose.

So I say okay, so your lowest dose let's say of semaglutide. Yeah. Right. Is the introductory let's say is is I think some point five. Right. What's the lowest of semaglutide.

Usually it's two five is a start.25. Right. As a starting starting dose. And then point five is where most people kind of end up unless they have to go high dose.

Yeah. Tide is more around the 22.52.5. Yeah. So to me if I'm microdosing towards appetite it's anything under 2.5. That's what I mean by because like I would say low dose meaning the lowest dose to me is 2.5.

Right. So anything below that. So if like it's a ten milligrams ML and I'm giving somebody 25 units, that's 2.5mg. So that's a that's the lowest. That's your low dose. Right.

But so my patients will start at ten units or 15 units which is only one milligram or 1.5. You know. And that's it. And then and what's beautiful about the the the smaller dose or the lower, lower dose.

Right. The micro dose is the patients are not getting symptoms. Right. And then that's the other thing I want to say too is tight treating it only to symptom tolerance to right tight treating two symptom symptomatic is fantastic way to utilize them as well to get the most bang for your buck.

Right. So just because maybe somebody tolerance is to 2.5 or 3, you know what I'm saying. There's appetite and they need it for multiple different reasons.

It's okay to go there because you're not they're not restricting their eating. They're not that like I find like when you microdosing two and when you low dose it like you're still you still get rid of the food noise, right?

You can function. And people notice that they just look more toned. They feel better in their body. What's wrong with that? You know, I mean, they're still doing the things that they need to do, but they're getting they're seeing results like better results from what they're doing, you know, from how they're eating and how they're, you know, exercising and things like that.

So anyway, that's how I use that, even in my patients that have significant insulin resistance or that are pre-diabetic, like I start I micro or low dose them and they they do amazing.

They're they're a on plummet. They lose the weight really really slowly. But it comes off and they feel good and they feel great, you know. So I don't know. Yeah.

No I'm a huge fan of that whole way of thinking. I think one of the things that people notice is the fluff. I call it fluff. The fluff comes off like they that that spongy is under the skin, like that little layer of inflammation very often will just disappear.

It's it's not even a it's not because you've got patients who don't need to lose weight, but they, they're soft like there's, there's something going on.

And all of a sudden that inflammation goes away. And that's when you start to just then you get all the other benefits you're talking about, like the improved HBA onesie, the improved even faster, even their liver functions go down, the fatty liver gets better, their profile improved.

Like it's really fantastic. You know okay, we're 11 minutes over to the deadline we given ourselves. So sorry. No. Don't apologize. It's all good. So where do people get in touch with you or someone like you?

I mean, here's the thing. There may be a lot of people have. I have a natural. I have a treat, a tree, natural. Heather doctor and a trained nurse practitioner.

They're both amazing, talented health care providers that have worked with me very closely. See all these chronic, complex patients on a daily basis. So if they can't see me, they can see one of the members of our team, you know, our team at Train Hell, you know, you can go to trainhelp.org You know, that's our website.

Everything's there. They can call and get a 15 minute discovery call. And then our our social handles. For me, I'm at doctor like period. Robin Rose on on Instagram and on Facebook I'm just Doctor Robin Rose.

And then for terrain health it's go terrain health on Instagram and on Facebook. Perfect. Thank you doctor Robin Rose thank you. That was awesome. You're welcome.

As always always love being with you. And thanks for all your work in this area because it's definitely your pushing water uphill. So and breaking new ground.

So I know, I know. Oh thanks Nathalie. Thanks so much for having me. My pleasure. Bye.