Introduction and Guest Background

Hi, everyone. Welcome to the Reversing Type 2 Diabetes Summit. I'm your host, Dr. Beverly Yates, ND It's my distinct honor to interview today Dr. Kent Holtorf, a leader in the field of peptide therapy, helping people with low or nonfunctioning hypothyroid exam issues and the crossover that goes on with diabetes in glycemic control.

Sometimes people's blood sugar issues are multifactorial. There's different systems at play, and Dr. Holtorf will help us go through that in detail, including the value of different kinds of peptides and other approaches.

So with that, Dr. Holtorf, would you be so kind an interview? Sorry, not interview, introduce yourself. I am Kent Holtorf, medical director of the Holtorf Medical Group for 20 something years.

My gosh, also have integrative peptides that we just started and we're going to be doing a My Better Medicine training program and we be doing a program where we treat all these Special Forces vets for free and and it's just amazing, the nicest people and you can't believe how messed up they are and their care that they're getting is terrible.

Well, the first guy that we got that came in, he had actually been just terribly sick, traumatic brain injury, post-traumatic stress, anxious. He couldn't read.

He had Allodynia, which is where you touch your skin. You can't even touch it totally nonfunctional and been in and out of, you know, outside neurology inside neurologist for eight years.

Nothing. He somehow found us came in and then within two visits we basically had as Allodynia was gone the first visit he was back to essentially normal after the two visits and then so this director heard about it one, two documentary.

And long story short, he got funding. So they're doing a 12 part documentary on the treatment of these vets and their cares is terrible. And they it's very interesting.

They're very homogenous in that they all have it came out with all chronic Lyme, multiple strains, European US, they all have antibodies to their brain.

They're so full of toxins and they are just immune systems are terrible. Of course their guts are terrible. And in so many issues and we're finding it's like kind of a really big breakthrough that, you know, some studies with traumatic brain injury so that they don't get better think chronic Lyme and we're finding that's the case and we didn't even expect that.

Wow. You know it's interesting when you talk about this because I think people often don't understand the overlapping relationship of these problems. So with that in mind, this is a great place to start, actually.

Let's chat about the immune system. Can you describe how the immune system is core in any underlying dysfunction that can produce this vicious cycle of the dysfunction and chronic illness and multi systems involved?

Because many people find this to be kind of complicated and daunting, and I'm hopeful in our conversation we can start to peel back the layers and make it clearer.

So can we start with talking about, say, leptin? Can you describe what leptin resistance is and why it matters? Yeah, so leptin goes up when you gain weight.

It's produced in the fat in other areas and it should go back to the brain and tell your brain, hey, we've got a lot of

stored energy here. Basically increase metabolism, increase your thyroid function, decrease your appetite and start burning fat.

But when you get this inflammation, which you see with diabetics now, we can start to how that all starts and then becomes a vicious cycle that the leptin goes up, but it can't get to the brain.

There's multiple levels where it has resistance.

Immune Dysfunction and Leptin Resistance

And so the brain thinks the body's starving. So what it does, it tells the body store fat, it lowers the metabolism, lowers your thyroid level and makes you hungry and like, well, we'll check everyone's basal metabolic rate, which basically checks their oxygen utilization over 10 minutes, extrapolates it out 24 hours.

And we find all these chronically ill diabetics are about 25% lower than someone their same age and weight. So they essentially are burning 500 calories less.

So they have to just to stay even. They have to eat that much less. And and so they're starving. And it's really it's really difficult. And we'll talk about that.

All diabetics are low thyroid even though their standard blood tests look normal and we'll talk about that is always an exception. But I haven't seen it yet.

But and just doing that, you know, but you can't give T4 because I'll tell you I'll show you why it doesn't work. E To give T3 is a time release T3 and just doing those things all of a sudden now their metabolism will come up.

And we also have some other peptides that also augment metabolism, mitochondrial peptides and things like that. So they can actually start losing weight because once you're diabetic it's very difficult to lose weight.

And there's actually the thing where it's it's a memory epigenetic, what is that epigenetic metabolic memory that even if you get your blood sugar and you know, and lose all the weight, your cells and your genes are still acting as if they're diabetic.

So you have this continual inflammation. And then also so all the problems, so your problems don't go away unless you do something about it. And when you do the right, they have lost all the weight and I got my blood sugars.

Great. Why am I still suffering? And you're at risk for all all these diseases. Interesting. So I think for the general public, sometimes they probably feel like they don't always get the whole story or the full picture.

Or I can imagine people listening going, Aha, I knew there was more to this story, right? So when you're talking about epigenetic memory and the fact that someone may well have healed from some things, but they still it's almost like there's a shadow being cast, they can't quite get rid of.

This will explain why this is such a persistent thing and probably how I can follow families go through generations because of that constant epigenetic expression.

Yeah, no, it totally does it. It goes through generations. And a stressed out mother in utero is much more likely to have a lot of conditions going autism, but also diabetes.

And because all of those genes are already set to that diabetic, what they call phenotype and those types of genes are turned on, turned off. And it can be you can you can turn them on and off.

But the you know, you got to do a lot of different things and can take a little bit. But that's one thing. Peptides are very epigenetic. They also work on the cell surface, but they can transform that rather quickly.

Okay. Okay. So if we look at this problem upstream, let's say with the role of very key endocrine organs, particularly in the brain, so the association between the pineal gland, the hypothalamus and the pituitary and if there's hormonal dysfunction there.

So up here, top of the top of the pyramid, so to speak, how does this relate to being low thyroid? But paradoxically having normal levels? So many. Yes.

And that's something that's a big issue. But let me go one step above. Okay. And and so kind of how all this starts. So if you gain weight, your fat cells and other cells will start producing inflammation.

And then what happens is, especially if you're stressed or happen to have chronic illness, you know, chronic infection or, you know, underlying, they don't even know autoimmunity where your immune system's already tweaked.

So when you think of the immune system or simplify it, think of two sides. There's TH1, the stuff inside the cell TH2 get outside the cell. Normally they're balanced.

Now you have your thymus that you're born with, but it starts in building, you know, basically shrinking at between age 9 to 14 and as it does, and then it has its lowest level right around age 40, 45, some people 35.

And and so what it does is a thymus envelopes it without its influence. The th1 goes down, the th2 goes up. So now you can't fight in your cell, your infections, you can't monitor very well for cancer.

But the outside is basically trying to, you know, function and just basically producing all this inflammation. And then that just sets off this whole vicious cycle where what it does, it suppresses the pineal hypothalamic pituitary hormone access.

It it basically causes mitochondrial dysfunction, which is shown in so many illnesses. Even with aging, if you look at aging, just the mitochondrial function goes down like this.

But diabetics are you really thinking has accelerated aging. So anything like mitochondrial dysfunction or immune dysfunction, they just get it much sooner and because of all this, you know, inflammaging now it's called in this whole, you know, longevity thing.

But the immune system is the key. And when I had, you know, chronic Lyme and babesia, bartonella, I did three and a half years of highest dose of antibiotics that I would never give a patient, never touched it.

And, and, and this was before we had peptides and then we kind of got peptides and because my natural killer cells function, which is our downstream marker of th1 was zero.

So you can't take enough antibiotics, you have to have your immune system take over. Then I had my TH2 was so high and then I got immune activation coagulation, which they couldn't even draw my blood with a 14 gauge needle.

Wow. And then it just had everything neuropathy. Then I went into heart failure and my heart was fibrosis, which is from that high human growth factor beta, which diabetics have.

And my cardiologist said, well, maybe in ten years you get 10% better. I couldn't go upstairs, I couldn't stand up straight. And I'm like, I can't live like this for ten.

I'm sorry, I'll off myself, you know? And so I kind of went around the world looking for treatments, did some crazy things, and a lot of things that work.

And I was in Belgium and did some peptides and then like four or five days later I might. I just walked up the stairs. Up Right. What the heck, you know, And then I'm like, wait a minute, you know, you're backtracking.

And so I got more and I couldn't bring them in to the U. S. at the time. But that actually opened up and funny. I went back to the cardiologist and standing up upright and he does the echo and he's like, hmm, that's interesting.

And I'm like, You want to know what I did? He goes, No, but great job. Okay. Yeah, The proof is in the pudding, right? Real results. It is hard to say.

I'm sure it's nothing. You did it, though, so it's rather you'd say it's a miracle, you know? Yeah. Yeah. I've got some of those in my in my patient. I'm sure you've had that too. Like, you know.

Well, we'll take it. You know, we're all about the results, right? I totally get that. Okay. All right. So you mentioned in part of your information here about mitochondria, would you take a moment, please explain to people what a mitochondria is?

What does it do and why it is important, right?

Epigenetic Memory and Hormonal Crosstalk

Like what happens to mitochondria for type 2 diabetics? And so mitochondria dysfunction is another commonality of so many chronic illnesses. And it's a little organelle cell that used to be separate from us and like a bacteria that evolved with us.

And then we kind of gave up our energy producing and it took over. And so people think of it as the powerhouse of the cell, but not not until recently it was shown that it can turn against you.

And so if you have chronic inflammation, if you have an infection that doesn't go away, cancer stress talks, strains in a mouth even. And basically you you stress the end to the endoplasmic reticulum go back to and also the mitochondria they at some point go into what's called cell danger response.

They go, oh shoot. And now instead of making ATP for energy, they'll basically convert to making reactive oxygen species and just pump out basically inflammatory cytokines, trying to protect the cell from whatever the invader is the toxin and their actions, the stress.

And so what then happened? So now you have these cells that have no energy, so they can't function. But it's not just you have the cells that aren't doing their job, they're now poisoning the rest of the cells and so they can do a number of things.

They can basically ideally basically get if you have good t one immunity, they'll go basically eliminate those cells called autophagy. It's very healthy and it gets renewed, renews this that cell.

But with low th1, you can't kill off those cells that may become what's called senescent cells. And now they get very resistant to basically getting killer.

Hey I'm not, I'm not going away. And they recruit other senescent cells and you look at two conditions that have the most senescent cells and this is huge in anti-aging is if you can selectively basically destroy these senescent cells that are bad actors, you can reverse diabetes, you can reverse congestive heart failure.

And so we actually are getting rid of this whole all these things that are producing so much inflammation. And when you look at it, inflammation is the thing that's causing all these problems, causing the leptin resistance, causing the hypothalamic pituitary, you know, dysfunction, causing immune activation of coagulation.

So your diabetics can be very hyper coagulate all and causing the, you know, gut issues, the leaky gut and the gut brain access and blood brain barrier opens up.

And so you're getting toxins in your blood and cognitive dysfunction, so much higher increase. And, you know, dementia in diabetics, cardiovascular disease, kidney disease and all those things.

So it's a very hot topic right now. And there's a number of things you can do to selectively and safely knock out those cells. All right. That's an important distinction.

I think it's so interesting that mitochondria that can play both sides of the field, so to speak, they can help us or they can hinder us. And if they are able to potentiate inflammation, this will explain why inflammation can be such a gnarly thing when it comes to cardiovascular diseases, in particular congestive heart failure, type 2, diabetes, pre-diabetes, anything that ends with the letters itis like sometimes you see this storm of inflammation that goes on and this was before COVID in the pandemic and words inflammation and cytokine storm became common in the.

Yeah, it really got people on board with that. And for instance, with diabetes, mitochondrial peptides are great, but if you use them too early then now you're stimulating the bad might mitochondria and you're making them produce more inflammation.

And there's some ways that you can look at it, say don't do that, and some that don't do that. They actually reduce what's called the the, the sarsaparilla excretion of that and boost the mitochondria.

But there's some that people love like see which is basically told it's telling your body, it makes your body thinks it's exercising increase metabolism boost mitochondrial function.

But if you're boosting bad mitochondria you're causing more inflammation though. Interesting, right? We all want to promote the good stuff and minimize the bad stuff.

It's always that contradiction in life, isn't it? Yeah. Yeah. Got to choose what's well what's, what's what. Yeah. Yeah. It just keeps coming up, you know?

It's like a metaphor for life, I think. All right, so let's back this up just a little bit. This everybody's on the same page because we have both health professionals that attend these summits, as well as the general public.

What is a peptide and how does it work? Yeah, so peptides are basically chains of amino acids, which is the same as a protein and just arbitrarily and depends who you ask, it's either 40 or 50 amino acids.

If it's under that number, it's considered a peptide. If it's over, that number is considered a protein. But if people say what the heck do peptides do?

We didn't know much about them and some of the peptides are most powerful or even just two amino acids. LONG And you know, how how could that do anything?

But they do and so in general the peptides versus a hormone like hormones will go into the cell and the cell nucleus attacks a DNA change, protein synthesis and then start making, you know, basically epigenetically different proteins, which will change some things.

Now the peptides are they then generally work on the cell server, some also work on the on the DNA, but they're much faster acting because they're on the cell surface.

They have secondary messengers and they're very poorly atrophic, meaning that they do a lot of things. And counterintuitive is that that makes them safer.

They're more like supplements. And when you have something that just does one thing, the other parts can't make up for it, and that's when you get problems.

Mitochondrial Dysfunction and Inflammation

So hormones will would generally do that. They can be pretty trophic too, but generally slow on slow off. They're generally will affect all the cells where peptides so that they can affect a broad range.

But a lot of peptides are very tissue specific in that you have, you know, immune peptides, you have basically pineal peptides, mitochondrial peptides, anti-microbial peptides, you know, all these different things and some of the new sets are going to be the next thing are bio regulators, which are very small and they work more in the epigenetic realm.

But they're, they're pretty incredible in, in the studies on them, like with cardiovascular disease, like you take a vessel, bio regulator or a brain and they work very quickly and they can, you know, boost, know brain function and cognitive improved memory reduced risk for, you know, cancer or and, you know, neurodegenerative diseases, cardiovascular disease, autoimmunity and all those things which we find happens again with doing the immune modulation, then we lo really become kind of immune modulatory clinic and that fix that immune system first you find that much of the other things start falling in line.

So although it is a, you know, diabetes like what's the problem? Well, we got, you know, into resistance high sugar and and that's my problem. No, it's like a multi-system illness that affects, you know, brain gut.

You know, the pancreas stops working as a pancreatic peptide. And and by fixing these, that we can make people genetically younger, you know, now you can do their biologic age.

And I want to do a program, I think, and guarantee that people will get like five years younger in two years. But I'll I'll see. I got to get more a couple more patients to be sure.

Yeah, we've got to check we've got to check these things. Right. We test, don't guess and then see that we get the result. We thought we were going to get out.

Yeah, that's fair. So you've mentioned a number of peptides. Please share with us what are the various classes of peptides. Yeah, so class of peptides and there's a lot of ways to classify them.

But I think the easiest way is to kind of look at what they do. And so and each in each category there's a number of peptides and so there's immunomodulatory peptides where the first one was thymus and Alpha one, which is approved in about 35 countries or so and totally safe, is approved for cancer to prove for chronic infection.

So, so your immune system like this, it raises that to one. Right. And it actually their downfall was that they came out with a study early in COVID, chose a safe and effective for COVID.

So they couldn't have that because then they couldn't have the vaccines as emergency treatment. So they banned it. And we see that kind of often. But and so but there's a number of like my favorite immunomodulatory peptides.

They're probably the go to peptide if someone someone's going to stars available supplement is PPC 157 And and when I give lectures on this and just it's Dalia for study after study, people are like, how the heck can it do all these things?

But it, it rejuvenates so many different areas for it. In a study where for inflammatory bowel disease and most you know, this was an animal study but they treated oral BPC both and it reversed both.

You know, like what? What do you have that does that? It will fix leaky gut, especially in combination with a couple other probably we'll talk about it causes healing of nerves like they'll cut a rats spinal you know sciatic nerve and if they don't give it back, it doesn't grow back together.

But if they do, it does. It works for tendons, ligaments, traumatic brain injury, basically after an MRI. It's kind of a smart peptide in that if you have high blood pressure, it lowers it.

If you have low blood pressure, it raises it. If you're hyper arguable, it makes you less. If you can't coagulate it and you're bleeding, it actually lowers the bleeding time.

So it's kind of a smart peptide. It suppresses mast cells. It there's just so many things that it does. It's a it's kind of

the healing hormone and it helps everything else work better.

Protect you from toxins, works for arrhythmias. They'll protect you, like in our fears patients, it will, you know, big things. Hey, get rid of the toxins.

Well, give them BPC first. It will protect you from the basically damage from the toxins. That's interesting. You know, it sounds like it's quite a regulator, like an adaptogen.

It gives you the balance that you might be lacking. So if you're hyper, it'll bring it to normal. If you're hypo again, it'll bring it to normal. That's quite a gift.

Okay. Yeah. And, and the nice thing is they can't find a toxic dose. So they gave volunteers I've a thousand times a typical dose and no side effects.

So you can't really screw up with it. Okay, that's reassuring. All right, so then if someone is wanting to learn more about this or is thinking of using it clinically or is going to ask for help from a health professional to use this, what is the way that's helpful to think about the treatment steps for using peptide therapy, let's say whether it's for type 2 diabetes or perhaps other chronic illnesses?

Yeah. And we're finding, you know, we're we're kind of known for, I guess, all my sins like, you know, treating the sick of the sick and and so but they all have a common pathophysiology.

Sorry I'm in temporary browsing. It's like but and what we find again is this immune dysfunction. And then you get that vicious cycle that we that we talked about.

And and so you want to first fix the immune system and no one BPC is a good one to start with. And then you want to add a thymic peptide which is like that thymus alpha one, but that's no longer available.

And you're so we the A product that was developed through metabolomics and transcriptomics to make sure it worked as well as thymus and alpha one. It turns out to be better with this called thymus gene and velan.

They're very small, but like finally, Majin is 100 times more potent than by myelin. And, and they have so many other effects like healing effects and, and things that will boost stem cell function, which is another problem with but diabetics and like yeah know people that they'll take their you know diabetic stem cells and give it to them.

It usually doesn't work very well because stem cells are just they're done but you can stimulate those. So they they most prominent thymic peptides. So in the famous Bruce is thymus and beta four, it's 33 amino acids.

It's very large, it's multi-domain, meaning that it does different things and the middle domain actually stimulates mast cells, which can be a good thing for healing in a healthy person.

But in a chronically ill person that increases inflammation and caused a lot of problems. So if you used the first fragment, it actually is the workhorse for the immune modulation is called TB for frag.

What Peptides Are and How They Work

And so you want to get that T-H one up, you want to lower that to two, and we do a lowering that inflammation, one that we love is CP v, which is alpha monocyte stimulating hormone, which is what makes pigment in your skin, but it's very anti-inflammatory.

And, and again, it's a long mark up to give it a V and then it has a negative being tan oil make you tan, but which is fine if you're young, but if you're older you get dark spots and all these things and and I, I tried Milan and tan and I'm kind of A. D. D..

I mean this isn't working. And all of a sudden I was like, like someone painted me black and I'm just like, Well, did

you know what's going on? But so you don't.

The nice thing about the CFPB, it's also you're lowering inflammation and believe or not, it's boosting your immune system. And it's very, very antimicrobial.

It outperformed a flu can against fungus and outperform antibiotics with, you know, staff and strep infections. And so you want to like these anti-inflammatories.

You combine with the modulators raising that that th1. So those are kind of the main ones, I imagine. And Valen has been a great combination. TB for frag and thymus.

Alpha one had the most research behind it, but it they won't allow it anymore. And let's see what I mean. There's there's a number of like by myelin and other ones.

But also it's interesting, the pineal peptide at the Talon is probably the most anti-aging peptide that you can find. If one take one thing to basically lower aging, you take up a Talon, it increases that increase your melatonin level, but it increases also your telomeres, which are little caps on your chromosomes.

And when the chromosomes divide, you lose those. As you get short telomeres, they it starts the cell starts, you know, not be able to function. Then you get basically errors and then it can go into again, that senescence that we that we talked about it.

Interesting like you know, with that pineal hypothalamic if you take out the pituitary this was in chickens and give them a battalion, their thyroid levels go up.

They don't know why. Like how does it get usually we learn you, it goes down, but it will fix that. And so it normalize so many fertility. They had was 135 menopausal rats.

And I guess you can use attorneys for this, too. But and they gave it to them all the ones that got it, 75% started menstruating again, 25% had normal live births.

So we'll use that a lot in in fertility and we'll see like increases in the anti-malaria and hormones. Their episodes will come down. And then a study, especially when you combine a battalion with a thymus and they did a 15 year study in adults 65 to 85 with significant cardiovascular disease, and they only gave them six doses and followed them for 15 years.

And the ones that and the other ones just did standard therapy and they found the ones that got that combination six times. They actually had a dramatic reduction in cardiovascular disease, all cause mortality, morbidity, their endurance went up, their cardiovascular function went up, and then they had a subset of patients that did a longer course and they had like four fold decreased risk of mortality and morbidity.

So it's pretty incredible. That is incredible. That's really quite amazing. So you've mentioned quite a few peptides here in the course of our discussion so far in which of these are specifically beneficial for type 2 diabetes?

Are there other ones in what you've mentioned. Yeah. With with diabetics we have and again boosting the mitochondria is key again. Yeah. With that one caveat, if you want to make sure there are not a lot of senescent cells, you can do some things to selectively kill those off, especially if someone has high CMB.

That's a marker of immuno senescence. But like what see is called is basically will stimulate the mitochondria and protect the mitochondria and you know, basically rev it up and get more energy.

Five amino 1mq is called like the exercise peptide. It pulls your body into thinking that it's exercising and, and it's a mitochondrial peptide and it's understood we had a doctor who had a daughter who was very perfectionist, she's a perfectionist and was doing so well at school, cheerleader, all this stuff.

But she kept like OCD and pulling out all her eyebrows and they tried everything and we gave her five amino one m cue and two days later nothing. And so all these mitochondrial peptides work in so many areas, congestive heart failure, a lot.

In Alzheimer's, for instance, there's one mitochondria work all human in. They named it human. And because it made Alzheimer's patients human again, there's anti-obesity drug, which is a fragment of growth hormone.

And it basically doesn't work on insulin resistance, but it will alter that basically metabolic catabolic versus anabolic and people lose significant weight on that.

And so you you add those things and especially I should should talk about T3 a little bit and boost those that you can get because you give a person a fighting chance and when they don't have mitochondria, they don't have any metabolism.

And it's nice when we show people their metabolism and their thyroid levels like their doctor says it's normal, but I've written a number of articles there on our nonprofit site, the National Academy of Hypothyroidism and Hypotheticals dot org. (nahypothyroidism.org) You can go there and get all those review articles that have a thousand studies, and if you bring a DNA chronologies, they'll they'll poo poo it.

Like, well, there's a thousand references here. You know and and so like we talked about with that hypothalamic pituitary basically thyroid dysfunction that we normal normally were taught in medical school that thyroid is easy that when your thyroid levels drop your pituitary goes hey it's low res TSA.

So if your TSA just hired though, it's low key, it's a low dose high. And if it's normal, it's normal. Not the case with chronic illness that works.

Peptide Therapy Strategies for Chronic Illness

If someone is totally healthy, not been exposed, any stress, any toxins, any chronic infection. So find that person for me. I would say that's not very many people in today's world, not in cortisol nation.

Yep. And we're being toxin to death. And what you find actually and you'll see this with also depressed patients and the largest study ever done on antidepressants, Star report compared T3 to all the antidepressant and unfortunately didn't expect this T3 giving T3 50 milligrams to depressed patients.

It didn't matter what their thyroid levels were, actually was more efficacious. It worked well and the anti depressants didn't work with less side effects, but it make it to the abstract because they didn't contribute to someone, just threw it in as the afterthought and I'm sure they got fired or something.

But and also one study, you know, 135 bipolar patients, treatment resistant, they tried on average 14 different medications with no improvement. Again, put them all on T3 of matter what their levels were.

85% responded, 35% total resolution of symptoms. And in and that was 50 micrograms of T3. Yeah. And heart failure people are scared to death to use T3 and heart failure.

But those patients are so low and they'll have arrhythmias because there's no mitochondrial function in there. And but you give the T3, the arrhythmias go away, their ejection fraction goes away.

I can tell you a great story on that. But I won't take that much time. But it you know, it is incredible for it just again, works, especially with with the peptides to get the mitochondria going to get their metabolism going.

And that's the problem with diabetes. They're all hypo metabolic colic. Then it affects all these different sounds and like none of the organs are working right, you know, and they have basically, you know, kidney disease.

There's like if you take TB for frag, it prevents the fibrosis or fatty liver, the BP c will reverse fatty liver TB for frag.

KP All these things that just goes away.

Even fibrosis, even cirrhosis, we've reversed. That's phenomenal. So it seems to me that this is one of those therapies that really helps the body have the ability to fix it and repair and restore, because clearly often in a chronic illness, there's something or multiple things that are missing.

And when you provide the substrates, then, you know, there's the potential that the body can finish up the healing process because otherwise it doesn't have the tools that it needs.

Does that sound like a fair summary? Yeah, Yeah. It's just you're running at such a disadvantage and they're pounding like giving a man. And while you have these dysfunctions that need to be treated at their core and, you know, go after the problem, it's like was a reset in you're out banks.

That's where the money is you know and but they're dancing around and you know just saying oh eight you know, they eat less, exercise more. It doesn't work.

You know, it's like a 12 step program. I agree. I feel. Like, yeah, it's it's like. Today's world exercise. Eat less, exercise more. It's just not enough because there's plenty of people doing that.

And they're still not well. So now. Yeah. Yeah, yeah. And then if you exercise, if you exercise or especially diet too much, what happens is it lowers metabolism.

And if you do a lot more than three times, it doesn't go back to normal. So now people come in, I've wrecked my metabolism like their husband's like, Oh yeah, right, you're eating ding Dongs in the closet, you know?

And we show them on paper and they're like, happy. They got low metabolism. Like, see, I told you, you know, and there's there's one set of peptides. They're all harder to get and they're basically myostatin inhibitors.

So with any with age chronic infection of the body will increase myostatin. And what that does, it prevents you from increasing lean muscle and decreasing body fat.

So it's like I don't want that, you know, and it's much higher in diabetics. So you wonder why people are so judgmental. I just go on the skinny person, just go on the diet.

I do like they don't realize all these roadblocks and barriers they have, you know, metabolically, physical, physiologically to losing weight, you know, and and so basically what it does so it's going called for a statin.

And then another one is what does it come by? I have it right right over here. Oh man. Oh 831 And and they both will inhibit myostatin. And so I was using full of stat and it was great because you do a workout and it's like getting five workouts and then I end up getting allergic to it and I stopped and I'm like, I'm not working.

I don't want 1 to 1 workout. But I was able to change it to the other one. But there's. Also did. You. Were you saying that it was full of them? Unfortunately, recording kind of warped a little bit.

You were saying which one was the 5 to 1 for workout? The other one, they both were the four statins, the main one. And we'd have like women come in, go after these £35 for my wedding in two months.

You know, and it's interesting, it tends not to work on a healthy person or a younger person unless they're sick because they don't have high myostatin.

But if you do, it can work tremendously well and lose weight and keep your lean muscle and so there's a lot of studies coming out on that. Okay, great.

A little bit earlier, you mentioned that there was a particular peptide I think you had in mind that was specific for weight loss and I wondered which one it might be.

There was that anti-obesity drug. Are you thinking that are you thinking of one of the ones that Big Pharma has out or something different? No, no, it's actually it got approved as grass.

So generally diet is safe and it's a fragment of growth hormone and it tends to balance that the metabolism. So what happens with diabetes too, is that the whole catabolic anabolic ratio is all off.

And so it will stimulate, you know, basically the body to burn fat, it will cause it to basically metabolize carbohydrates and fats better. It will lower cholesterol.

And it actually went through trials and they did a very poor design and it didn't have enough clinical significance. But you look at the data, it looks pretty good.

You know, most big pharma companies, they tweak the outcomes and get it approved, but they didn't. So that's available. It's a fragment of growth hormone.

Does it have a big name? Yeah, it's it's anti-obesity drug, a code. Name of it. Yeah. Okay. Yeah. And other ones, again, I keep lowering the information.

I mean, there's so many ways to go and then, you know, senility fixed and getting rid of those where things aren't working. Get rid of those, those bad cells.

And. And all of a sudden the things start working. And also we'll see a lot more with chronic Lyme and Sears patients. It's immune activation of coagulation, but diabetics are much more prone to it.

So they're they're basically a lot of diabetics have chronic infections when their immune system load or be prone to it. And with that, the body will try to lay down fibrin to to basically wall off this infection.

Then it starts pumping antimicrobial peptides in that little space. But the bugs have basically evolved over millions of years and they got a way to get around.

They wrap themselves and fibrin. So now the body has a problem with these. Basically all these bugs hiding in there and can't get out. And so also what happens is as it gets worse, you know, basically hormones can get through medicines can't get through, waste products can get there, I mean, slowly.

And then oxygen that takes 2 seconds can take up to 2 minutes to get through. And and we could actually check this. And we find also it's a problem, huge problem after COVID and also the vaccine.

And if you check like a d-dimer or prothrombin, fragment one into thrombin and thrombin protein C protein. So high monomer and you'll find these patients and then if you clean it up.

So we'll do like low dose heparin for a little bit at such a low dose. It's not, you're not anticoagulation or any any risk or and also fiber lytic enzymes like natto kinase lomberg kinase and things like that.

And once you clean it up, as long as you still have an ongoing infection or whatever it may be, now all of a sudden, basically auctions getting in and people have like a very poor endurance.

If you look at chronic, you see chronic fatigue syndrome patients and you look at like their lactate levels with exercise. So normal person will go like this.

Diabetes, Weight Loss, and Myostatin Inhibition

They'll go because they go into anaerobic metabolism very quickly because one reasons they can't get the oxygen flow into the cells. And we'll do a little kind of a parlor trick.

I mean, it's not totally scientific because it matters the person's, you know, basically good of an effort they make.

But if you put a pulse ox on someone and let's say they have this coagulation problem, it's it's like it's 99 or like, oh, that's good.

Well, where do you want the oxygen? You don't want in your blood. You want in your cells. Right. So what we do is we have them blow out all their air and hold their breath as long as they can.

And normal person, there's a little delay. So basically you're no oxygen replacing what's going into the cell. And that saturation will go down to about seventies with people with this coagulation problem.

It may not budge. It may drop three, four, five points at the most. And it's just like, wow. And we're also doing like, well, look at their blood on the microscope and you can see all the blood, you know, basically regulating together.

And it's really interesting. It's very powerful when you see it on the screen. But we have another coagulation device that we can that we check. But it's it's a big problem.

And if you don't that And what's interesting is that you give medications that don't seem to work. But then if you clean up this gunk now they start working and we'll see it, especially with our lives that are IV's aren't working.

We're like, okay, what's going on? I look for that coagulation, clean it up in the same IVs didn't make a difference. Now start working. That makes sense, right?

Because you know, the nutrients aren't able to get in. The waste products can get out. The oxygen is not going where it needs to be. The carbon dioxide is not being exchanged.

You know, the whole works is going up. So once you remove those obstacles, it makes sense now that, you know, therapies that didn't work before are now we're finally having the benefits, the results that you would have expected.

So thank you for explaining that. I think that there's going to be a lot of people nodding their head, going, yep, either they've experienced it or they may have suspected that was the case for themselves or someone they care about.

That's so. Good. Yeah. Like, why isn't this working? Yeah. Yeah. Especially when it's just super well indicated. Everybody's, like, scratching your head and it turns out there was a blockage or root cause kind of issue.

Okay, so when we're talking about type 2 diabetes, we're talking about hypothyroidism and some of these crossover issues, you know, immune system dysfunction, what are the key labs to check other than the standard ones that are commonly monitored?

Because often I find this really it makes a difference for people who have the problems if they know what lab tests make sense, particularly if it's not your garden variety kinds.

Yeah, and they'll just and the doctors, you know, they'll get there and see, like get a CBC, a chem panel and a cholesterol and I'll try to give them statins, which then, you know, increase your risk for diabete cause you know, it's crazy, which is ill and congestive heart failure and so many other problem.

It it also it is toxic to the mitochondria. Yeah it's it's crazy but yeah so some cases we want to look at that immune system and there's a lot of sophisticated tests with cytokines and all these things we found now don't even go there because one, the cytokines are very sensitive and lay bile that, you know, a lot of times they come out zero but also parts say the body is low t one the body may be secreting a bunch of cytokines trying to raise this and they check the cytokines and they'll say, oh you're th1 dominant.

And if you look at their like conditions considered th1 underlying teach one dominant issues and other ones you like, like graves is considered ath1 Hashimoto's stage two.

Well why do they respond to the same treatment? You know, and the problem was, was that th1 was is very close

to what's called t h 17, which actually belongs on the th2 side and it's kind of the autoimmune leg of that immune system.

So we're with all these patients, they say, Oh, that's the one we don't want to raise the age 120 years, never seen a problem, you know, and, and they were just still stuck on, you know, well read in some old textbook or whatever.

And even some of the journals bring it up. But a couple issues. So you want to look at one of the baddest players as human transforming growth factor beta.

And what it does, it causes tons of inflammation or raise IL six. You can check IL six too. But and when they have that, it's directly correlates with how bad that person is, how much inflammation it causes.

A lot of fibrosis. And so you'll get, you know, basically Nash you know, fatty liver that turns up cirrhosis, kidney dysfunction, all those things. So things that specifically lower that are violent and.

KP So and TB for Frank so raising that it's going to lower that eventually one factor beta another marker is C for A and and these are three they'll screw up that you know and the natural killer cells function is the marker that we use for downstream.

And he also last number one cytokine. Well no but it's the downstream effect and it's better to get the the activity because you can have them there but they're just not doing anything for a study on chronic fatigue syndrome showed that 25% have a low natural killer cell number and 75 to 80 of those 85% had low natural killer cells function, and it directly correlated with those with severe disability.

So it was an objective marker are the ones, again, the thyroid panel. And what you'll find again is low normal TSA age high normal for EGFR. And the reason the T4 is high is people go, Oh, it's high, it will.

No, the problem is the mitochondria don't work. So it's active transport to go into the cell and so it's high because it's not getting into the cell. And now T three is also energy dependent, but less so.

So you'll see the high T for not because it's you know, and people think whatever's in the Sierra was in the cell. Absolutely not. And then you'll tend to have a low normal t three because their dehydrogenase is also get messed up where they'll start basically instead of making t for 2t3 they'll make t four reverse d three, which actually blocks the effect of t three and which is why you give in all these studies.

They show like depressed patients, diabetics, they'll go, Oh, you say they're low thyroid. Well we gave t four didn't do anything. Well yeah it you gave the wrong medicine you know and in so many studies on this and congestive heart failure same thing that again they have problems with the pituitary so t h is lower so you make less thyroid, you have problem converting and and now the conversion of t four to t three goes down everywhere in the body but it goes up in the pituitary with chronic illness and the transport goes up.

They have different transporters and so the pituitary with chronic illnesses more so it suppresses the gsa. So it it's opposite. We used the one tissue that when you're sick it gets more thyroid, the rest of body it gets less.

Key Lab Testing and Thyroid Interpretation

So a lot of a lot of the support on that and but still doctors are stuck on got you synthroid. Got you synthroid and you look at you know who's funding all their conferences and you know basically supplying the medical education to them. But let's see also sex hormone binding globulin and people thinking that considering I with testosterone but as HPG goes up in response to two things in the liver it's secreted in the liver the intracellular level of thyroid and estrogen.

So the person's menstruating. You know, they're on estrogen, you assume they're normal aspirin. So it actually directly correlates with the intracellular level of thyroid.

And actually one study on diabetics showed that A low stage B, G had 2.5 fold increased risk for mortality of morbidity. Other things you can look at the CD4, CD8, CD8 ratio typically 2.5, and you're looking for this kind of tricks for immune dysfunction.

A number of studies showed that the T 3 to 4 ratio and the T three reverse t t ratio is a better marker and is associated correlate with symptoms better than the TSA age.

And so we'll look at that. We also do a test called the Faro flex where British medical journal like top five journal in the world. They showed that a knowledgeable doctor looking at someone's ankle reflex was a better test for a thyroid than a blood test.

So how could that be a normal reflex goes to. But the lower the thyroid, the slower the relaxation phases D And so we measure that via the computer along with their basal metabolic rate.

But let's see what are some other. Yeah. Again basal metabolic rate like our average panel that we start with is like 40 test. So it kind of freaks out the phlebotomists but they're they're useful you know and oh, those aren't necessary.

Well, they're not necessary. We don't know what they mean, you know. So I agree with you about that. I think that's where the controversy with some of the lab testing, especially for thyroid, often often conventional providers will tell the patient, oh, you don't need to look for reverse T3.

That's one thing that tends to get food. Yeah. And that will and the problem with reverse T3 is it used to be done with a radioactive amino acid and it correlated with symptoms wonderfully.

Then they said oh we got a new precise test. The LC gas chromatograph mass spectrometer, LC GCTMS, CMS and it's it's precisely inaccurate. And so what it did, it crunched everyone into this tiny range and it so it it makes it less useful.

It's still useful and everyone wants this like, okay, what's the ratio of T3 and T3. You know, once a number. Well you just, you know, we used to be able to do that, but now it's kind of like, you know, just this look and and you'll see, you know, that's why we do a lot of tests.

We like to paint a picture of what's going on. Yes, absolutely. You know, the individuality of health and its expression or disease in expression. You know, these are personalized precision medicine points that matter because even with twins and triplets, people really aren't identical.

They really do have different expression. And it's important to that's another way to meet people where they're at. I agree with you about this. Okay. Super cool.

All right. So as we come to the end here to wrap this up, are there any things you'd like people to in particular have were takeaways? No. I mean, if if you're a physician and considering peptides, they're they seem overwhelming but they're actually Yeah.

A little training and you know there easy will revolutionize your practice I mean change my life really so practice everyone that we educate that is you know it's taken friends with these chronically ill patients whether it be four years of animal or whatever.

Now we may not even have to do antibiotics, or if we do, it's four months, you know, reversing congestive heart failure, kidney disease, you know, the liver.

One guy with with the liver is on a liver transplant list. And we we did a number of things. It wasn't just peptides, but peptides were were involved and he ended up getting off of the transplant list close to healthy.

And and we see kind of a lot of that stuff. But I it's kind of like say they bring on any ALS patients, they're, you

know, basically given a death sentence.

They come in a wheelchair, they're jogging, they go back to their neurologist and they go see hanging up, go, hey, they all must have a misdiagnosis, you know, three of you.

And so they always have chronic infection and things like that. But all these conditions, the nice thing is, is they all have this underlying same pathophysiology.

And so you know what to look for and how to, you know, quickly fix it. Problem is, if they go to immunologist, they'll even check their immune system.

You know, and the joke is if you have a hormone problem, they'll go in a canal just, you know and they'll just give you insulin or whatever and don't go to an OB for hormones.

They'll just take out your body parts and give you birth control pills and deal with the infection. They don't. If you have a chronic infection, they won't address it.

Closing Remarks and Where to Learn More

It's it's very strange. It's an interesting time we're living in, that's for sure. All right. Thank you so much for your time and expertise. I appreciate very much having a chance to interview you and do this session and record this information so that people have access to some more ways to think about and address these problems because they are so serious and how they impact other people's lives.

Dr. Holtorf, Where can people find you if they would like to get more information and connect? Well, I'm hiding in a hotel right now. Hopefully that's temporary.

Yeah, well, we're going to start a training program which have been launched, but through My Better Medicine they can go to the National Academy of Hypothyroidism a lot of information there.

But long story where our site got hacked and they stole all that. all the content, but And then our medical group is Holtorf Medical Group (holtorfmed.com) and then integrativepeptides.com where we have a supplement peptides that are available as supplements so that we already buy available.

And so you have to usually you can basically need a compounding pharmacy if you want some of the peptides that need to be injected. All right. This is also good to know.

I'm sure people will be appreciative and reach out because there's lots of people who have similarly complex situations or who just need to have some clarity about what their options are, you know, possible next steps for their own treatment.

Just the investigation process of what lab test makes sense and what are their therapy options. So thank you. And we're happy to send a lab test. I got a big I never say no and it's funny, like we're at conferences and the doctors, I'll see someone limping.

Hey, come here having BPC, and then the next day, they're. They're not like, What the heck? So we're, we're launching peptides actually. So because you know, the dog that our dog has a bum leg and to be treated with BPC if, if we don't, he just kind of yelps all the time.

And so we have some cool formulas and things like that. And it's fun helping people too. Yeah, absolutely. Quality of life, you know, everyone wants that.

So thank you for your work and your insights and your research. Okay, So friends, please check out our sessions and recordings, connect with our experts and be sure to share all this goodness with other people you know, who care about their health.

Maybe you're recognizing yourself. Maybe you're recognizing someone else who has a problem who could benefit from this knowledge. The more that we can spread this summit in these sessions, the better off everyone will be and their general knowledge of health and wellness and how you can be your own advocate and sometimes health detective where needed.

So, Dr. Holtorf, thank you so much. It's an honor and a pleasure. I just love your energy and your passion. Keep it up. It's it's it's infectious. So thank you.

You're welcome. Take care.