

Peptides 101

Dr. Kent Holtorf



Speaker 1 ([00:02](#)):

Hi,

Speaker 2 ([00:03](#)):

Hi, it's Dr. Kent Holtorf. And I hope you're enjoying the peptide summit. I want to do just a very brief introduction to peptides and basically the background, the different class of peptides and their mechanisms. So that when the speakers are, you know, we're all talking about different peptides, like, you know, what the heck do each of these do, because sometimes they can, you know, just re reel off a bunch of different names. It's like, what the heck is that? So I want to go through and put them in classifications for you and understand some of the basic underlying fundamentals of peptides. So it's called Peptides 101 and just a little disclosure here. And then our legal department wants me to say which is true. I am chief medical officer of integrated peptides and whatever I say, and also the speakers, it's, it's our opinions.

Speaker 2 ([01:04](#)):

We're talking from experience and studies and has nothing to do with the integrated peptides saying anything, this is coming from us. And also any studies that are discussed you know, there's no perfect study, so it could be animal studies, different doses. It's, you know, there's no studies on the actual products that integrated peptides has. So I want you to keep that in mind that we are talking generally say educational discussion of peptides in general. And none of these anything said is, has not been evaluated or reviewed by the FDA, and it's not nothing as intended to diagnose, treat or cure any disease. And to the right there is the legal ease that you can read. So let's go there. What we want to kind of achieve here is understand what the heck is a peptide, and then understand the multiple types of peptides and, and what their targets are to support normal functioning and the core aspects of dysfunctional systems.

Speaker 2 ([02:23](#)):

They're involved with aging, poor lifestyle, toxin exposure, and, and to address symptoms of the multi-system disease and understand how peptides differ from hormones, their mechanism of action, and understand the, again, the basic classes we have immune modulating rejuvenating, and these are pretty arbitrary, but, you know, sleep brain, you know, basically you know nootropics

anti-microbial mitochondrial or energy. They have the growth hormone releasing hormones melanotropic, which are great at really anti-inflammatory and anti-aging. And anti-inflammatory and other ones. So they'll cross over and they work so well together, but we'll try to make some sense of it and put them in different classes for you and understand really the underlying issues of how the heck we get sick and why we age and how peptides can aid in retarding that, you know, basically progression to, you know, multiple illnesses that multi-system illness becoming frail you know, autoimmunity, cancer, cardiovascular disease you know, just basically loss of muscle mass, increased body fat insulin resistance, decline of memory you know, basically your immune system starts declining.

Speaker 2 ([03:57](#)):

And so we'll see some of the things that when you look like, damn, you know, why aren't we addressing those when you look at what really changes as we age. And we see that so many conditions are associated with you know, this immune dysfunction that we find with chronic aging you know, including stress allergies, toxic exposure lifestyle, certainly mold, obesity, insomnia sleep apnea where you get this Th1/Treg. So think of everything as a basically a teeter-totter. So you've got Th1 one side and Th2 on the other side, Th1 gets stuff inside the cell. Th2 gets stuff outside the cell, and usually they're in balance, but as we get older, the Th1 gets too low. So now you can't fight intracellular infections or cancer, but now you have all this inflammation, right.

Speaker 2 ([04:59](#)):

But also they found that the Th1 goes along with what's called Treg, which is kind of the, the balancing immune system. And it keeps your immune system from going too far. So when that gets messed up or isn't high enough, it kind of, it puts the brakes on everything. So then you get autoimmunity, and then there's on the other side with Th2. So you gotta Th1/Treg Th2/Th17. Th17 really is that autoimmune the inflammatory driven side of the immune system. And as we age with any illness and disease, it starts going like this. So all you have all this Th17, Th2, not enough Th1, not enough Treg. So we're going to talk about how that to snap that back to become younger and, and really have a younger immune system, which then perpetuates everything healing you know, lack of this degenerative diseases that we see with aging.

Speaker 2 ([06:07](#)):

And really we'll talk about, you know, gut how the gut is so important and the gut brain axis. So I just wanna, you know, bring up these topics. So when, when they're talked about that, you have heard of them before. So what the heck is a peptide? It's basically a protein, but it's arbitrary if it's less than 50 amino acids. So it's amino acids connected. If they're longer than 50, some people say 40 or 50, there are protein. If they're less, they're considered a peptide. So there small proteins now don't, they differ from hormones, we'll say, well is peptide a hormone. There are a lot of peptides that they're, they're called hormones and vitamins that are actually hormones, but peptides will

generally work on the cell surface. They work quicker, they work what's called a pleiotropically, they have cells signaling and they signal multiple messengers and have multiple effects.

Speaker 2 ([07:08](#)):

It's much like a vitamin. So when you say, what does a vitamin do? It has multiple effects. And actually it's actually much safer. It sounds like, wow, we don't know what it does. And so many things, but, you know, drugs tend to be very targeted. And that's when you get into problems, is that it blocks one thing, but you don't think of all the other things that it basically affects when you're just trying to block one thing, but the peptides will generally have multiple effects and they also work epigenetically and turn on and turn off genes. So when you look at your genome, people think our genes are what what's going to happen, but really when you do a genetic test, your genes are about 20% of what's going to happen to you. 80% is what affects those genes epigenetically. So whether it's lifestyle, toxins, pesticides, plastics exercise medications whether they be hormones, peptides, you know, all those things acting on those genes can turn them on or turn them off.

Speaker 2 ([08:17](#)):

For instance, a peptide may turn off a hundred genes and turn on 200 genes. So when you have, let's say you're, Oh my gosh, I've been Apple EFR. Then we had Alzheimer's, but if you turn that gene off, then you're fine. You only have 20% is set in stone, 80% is not. So, and then the hormones in contrast, actually go into the cell, go into the nucleus, work on nuclear receptors, very slow on, slow off. So and they tend to have broader effects and actually be you know, more side-effects and not as safe in some of the peptides, you can give a thousand times the normal dose, and there's no toxic effects, not for all of them, but there, some of it's like, you can't do that with water, but they, they are in general very safe. And they work basically in a different mechanism. They're very synergistic with other peptides hormones. I don't know, you know, something ahead, any peptides you can't give what with extra.

Speaker 1 ([09:36](#)):

Yeah.

Speaker 2 ([09:40](#)):

So peptides, we found out, you know, we thought, you know, hormones are the master regulators, but we found that peptides really are regulate almost every process in the body. And they're very tissue and cellular specific. And they're more precise than hormones. Hormones are kind of like hitting it with a bat. And this is like, you know, what the scalpel they did around tissue specific effects while hormones have more broad effects. Again mentioned the extremely safe and more and more peptides are going to clinical trials, the drugs coming out, or peptide hormones or, or peptide, whether they be antibiotics or you know, basically a big thing now is mitochondrial

peptides and things for diabetes about 30% now. I think it is, or coming out, it'll probably be about 50% of new drugs coming out are peptides.

Speaker 1 ([10:43](#)):

So

Speaker 2 ([10:44](#)):

What are the general categories? And this is somewhat arbitrary. You can break them down in so many different ways, but let's talk about immune modulating. We talked about that Th1/Treg, the H two G 17 balance. So thymus and beta four or TB four frag. They basically are kind of, even though they'll increase Th2 and lower TH2. And do both of those, the difference is now by with some beta fours, very long four peptides, 43 amino acids. So it has multiple what they call domains that do different things. And one of the domains actually stimulates mass cells. Now, if you give T before to someone who has actually a mast cell activation syndrome, too much mass cell activation, it will probably help, even though it has a domain that's shipped by its mass cells. Because overall the upstream, the fact modulating the meme system will actually suppress the mass cell activation.

Speaker 2 ([11:49](#)):

But the T before frag is what the, what it is. It's taken out. The part that has all the immune modulating, all those good parts and the rejuvenating effects, but leaves out the part that C mites mass cells, it's also much smaller. So across the blood brain barrier gets into actually biofilms. It gets into, you know, very small nooks and crannies in the body and has a much better effect in a lot more places. BPC one 57 is just, it's a core treatment body protection compound. It is basically produced in the gut and it's when one of the few peptides are stable in the gut. Even though it's a longer peptide, it actually absorbs very well and shown to be equal potent, whether you give it orally or subcutaneously, or I am, or however you, you want you inject it IB it's for the same dose, it has the same effect if you take it orally or systemically.

Speaker 2 ([12:59](#)):

So let's say you have a knee that hurts that same dose orally and the study show that it will work the same as if you give it IV. Now, I think, you know, be injected in the joint. That's going to be more compressed in that joint. Then you'll get a higher level of reduction inflammation and all that in there. But in general it will be the same as let's say, subcutaneous or oral, the same dose while the same systemic effect. And they shown that for you know, studies on models of, and, and Alzheimer's and you know, whether it be diabetes and metabolism tendons, joints, all those things I missed an alpha one is actually an approved peptide. It's approved as an orphan drug here in the us, but so you really can't get it, but it's approved in over probably 30 countries for everything from cancer to basically infections like hepatitis B things like that.

Speaker 2 ([14:01](#)):

So it really increases that Th1 and really so kills those interstellar infections [inaudible] or other famous sins that are produced in the famous glam, which we're talking about. And they all have generally similar effects, but a little difference. You know, some have more modulating effects, like for instance, times out for is really on Th1 raised that that was a beta for basically is more even we'll raise Th1 lower Th2. And that Th17 now find one is kind of like a bio, some beta four, but it is more anti-inflammatory thing. And it's probably one of the best for Herxheimer reaction, although the other ones work as well when he had like a T before, too, before a frag with BBC BBC lowering that pH too. And then the tea before, and now that the thing that tea before and tea before frag has over by Minson alpha, one is more rejuvenating effects, more growth factors worth I'm set out.

Speaker 2 ([15:11](#)):

The one is more, you know, kind of that boosting that immunity for infection. I put battalion and pioneer Leon their pineal hormones, and they actually will stimulate the 5s to make dynamic hormones. And what's interesting. You can take out the pituitary and give the pineal hormones and it will stimulate the thyroid. So it will somehow stimulate the TSH receptor when there's no pituitary making TSH. And it's really a balancing hormone. One of the, probably the best anti-aging hormone studies show when you take it they've done studies basically people over 65 years old significant cardiovascular disease on a four for 14 years, a dramatic reduction in mortality morbidity. They live longer. They're actually cardiovascular function gets better while the people on standard therapy get worse and they basically have dramatically less cancer, heart attacks, and they live long sleep peptides. Some of these are just a miracle for people who can't sleep like myself is a combination of the battalion or pioneer

Speaker 3 ([16:43](#)):

Lillian, which again, the pineal hormones

Speaker 2 ([16:45](#)):

And the, and those are shown to actually just, those will raise your melatonin levels for an older person up to youthful levels just by itself, but they have much more effects than that. Now, when you add that to Delta sleep inducing peptide, which what, it sounds like a sleep inducing peptide you had that, and then like a growth hormones create a Gog that increases growth hormone or AOD, which is anti obesity drug, but it's a fragment of growth hormone. It really resets that sleep the whole system where you can actually get deep sleep, that deep wave sleep. So the the, the Delta sleep and distinct peptide, it's not like a sleep med where you fall asleep. It changes over time. It takes a couple of weeks, but it kind of resets that where you can actually get sleep.

Speaker 2 ([17:41](#)):

We find that combination of those three of the basically pineal horn peptides, a battalion [inaudible] don't sleep inducing peptide in either growth rooms create a Gog or AOD or growth

hormone, and you get great sleep or see if it improves sleep with deep wave sleep after a couple of weeks. So there's a lot of, you know talk about, you know, all the growth hormones create a gorgeous growth hormone, releasing hormones, growth of releasing peptides. It shows they work better together. It's very complicated and we'll go into that, but just so you know that and the problem is people started associating that with like bodybuilders and things like that, but you can't overdose. Cause if you take too much, it doesn't basically raise your growth hormone or than it should, excuse me. And then AOD is a fraction of growth hormone.

Speaker 2 ([18:40](#)):

It does not increase IGF one, which is how most of the effects of growth hormone, but it has its own rejuvenating effects. And also does boost metabolism. So hence anti obesity, drugs, brain peptides C-Max and C Lank. Those are shown to improve memory attention add OCD, they increase brain connections and all these have almost no side effects. I have never heard of any even healthy people. They improve you know, test scores and things like that [inaudible] has been around for out of 40 years. It's basically based on porcine brain peptides, a combination. And and it's been given IV for a long time, but now the FDA says you can't do it because it's now called it's a biologic, so you can't give it IB, but or as an injection, but it does absorb orally.

Speaker 2 ([19:54](#)):

And the studies show that, and it's shown to help with a traumatic brain injury recover that improve memory autism and increase brain connections, protect the brain from toxins and so many great things with cerebral license. And there's a long history of safety and efficacy. They Hexa is a angiotensin two seven analog basically that is shown to improve Alzheimer's and, and memory cortigen and other brain or Tropic increases brain metabolism. And all these are very synergistic with for instance TB for TB, for frag and BPC are shown to protect the brain from traumatic brain injury, increased memory. And I know when we give people BPC and T before they look down, I can think clearer, or that's what they say,

Speaker 1 ([21:02](#)):

The growth.

Speaker 2 ([21:04](#)):

Yeah. We could spend a lot of time on this, but essentially no there's growth hormone, releasing peptides and growth are all these hormones, and they're shown to work better when they

Speaker 1 ([21:14](#)):

Are used together. And then they

Speaker 2 ([21:16](#)):

Enter obesity drug, which is a fragment

Speaker 1 ([21:18](#)):

Of growth hormone. And again,

Speaker 2 ([21:21](#)):

Most of these peptides are naturally produced. But some are synthetic and some are drugs. For instance, like diamonds and alpha. One is approved as

Speaker 1 ([21:32](#)):

Antimicrobial

Speaker 2 ([21:33](#)):

Tides. LL 37 is a big one, very broad range of antimicrobial properties that your body secretes actually STEM cells secrete them. It also stimulates STEM cells. So again, it's a good vicious cycle. Diamonds, an alpha one is approved for infections. Could it raises that Th1 times in beta four and T before frag also BPC one 57, all the studies have shown that it's, it's very up. I haven't seen any studies on bacteria, but every study on viruses shows, like for instance, it outperformed a cycle of a year at one, 100, the dose so killed the herpes virus better than a cycle of at one, 100 the dose. But there's not that many studies on other things. So we find that it really helps a lot of infections, but there's no studies to really back that up, but extremely safe.

Speaker 2 ([22:34](#)):

And when juvenile setting, again, we'll bring in a lot of these peptides BBC, one 57 increases healing. Why don't you have lectures on it and show all the studies it's kind of embarrassing. It's kinda like snake oil. How could it help everything for everything from Alzheimer's joint pain, autoimmune disease skin problems any inflammation to so many things. And the T before that he'd before a frag again, I mean, modulation the battalion and [inaudible] again, will stimulate the 5s, but also has even higher upstream effects for instance, the working on the pain centers and the sleep center Delta sleep does like what it says is a sleep center, but it's very anti-inflammatory. So one of the things that it likely does is lower the inflammation in the hypothalamus, and that really helps you get deep sleep.

Speaker 2 ([23:37](#)):

So all these people with Lyme and chronic infections, they have inflammation hypothalamus, and they can't sleep. They're just wired. So it is great at lowering inflammation there as is the Malana Courtens, which we'll talk about especially KPV, which can actually get in there. The growth hormone releasing hormones go through losing peptides will actually do the same. Mitochondrial peptides are so many studies now in trials with boosting mitochondrial function, cause it is a core

cause of aging or cells don't have enough energy. Their immune system doesn't have enough energy to fight infections, to fight cancer. And actually it's called a tough G where these are called senescent cells. They just kinda sit there and they're just functional and they start the mitochondria get dysfunctional and they start to creating all this reactive oxygen species, a lot of oxidative substances.

Speaker 2 ([24:39](#)):

And so become you know, very, you know, tagging the body with the, all these oxidative compounds and, but boosting the mitochondria actually reverses that. So for instance, there are also any chronic illness, especially lots of studies on Alzheimer's Parkinson's even, you know in, in terms of muscle strength that you want mitochondrial function, you need energy for all these things to work. So there's Mazzi which actually usually do as an injection twice a week or so five amino, one MQ, which we've had really interesting success with, with you know, kind of psychiatric issues such as OCD add depression. For instance we had one patient who basically pulling out young girl or eyebrows and after three days on five minute, one MQ, she stopped and a human, which is, has some amazing things going on with it and lots of clinical trials where for diabetes, it, all these mitochondria things also boost metabolism.

Speaker 2 ([25:58](#)):

Your metabolism drops as you get older. So you get, you know, type two diabetes obesity you know, basically there's not enough energy for all these systems to work. [inaudible] Is tons of trials. It improves mitochondria function is the basic in antioxidant inside the mitochondria. For right now it's very expensive to get the dose that works, but a lot of great studies coming out on that BBC and T before and TB for a frag being smaller, it gets into the mitochondria. Those are also mitochondrial boosters and you'll see a boost in mitochondria. When I had the Milena Tropic peptides the basis is alpha months, I see money hormone. So you think of that as, you know, increasing Malana sites, right? So basically getting a tan, a response to the sun, but they're also very anti-inflammatory and you'll find a lot of people, you know, they just love laying out or getting a tanning beds cause it just makes them feel good. And that's what we find is that it's very, anti-inflammatory boosts serotonin and dopamine. And these, you can't really give alpha monocytes, anybody hormone. It just breaks down very quickly.

Speaker 4 ([27:18](#)):

And there's a blended ten one and then

Speaker 2 ([27:20](#)):

Two, which is which is available. You get tan, you lose weight, increased libido, increase erectile function. So it's kind of called the Barbie doll or the Ken Kendall peptide. But the problem is if you're young, that's great, you get tan, but if you're older, it will bring out dark spots in that. So now KPV is a tiny tri peptide fraction of alpha monocytes wanting hormone that has more

anti-inflammatory effects actually than the whole peptide, but it actually does not stimulate the Valenta site. So you don't get the darkness of skin, which is good plus it's small, so it can absorb orally, can cross the blood-brain barrier and we're having great results with that for mass cells for autoimmune disease PT, one 41 is approved for libido and women, it just got approved. It it's an interesting peptide.

Speaker 2 ([28:24](#)):

I don't know if I've ever seen it, not work. It's a little strange though. There's a side effect of nausea, which does tend to go away. But for rectal function, you know, nothing beats it. And then, you know, some libido improvement and again, it's approved for increasing libido in women side effects of nausea. You can get a local reaction. And it's interesting when I was very sick and I would inject the peptides, I get this red Mark, which looks like I was allergic to them, but as I got better, it went away. So really was that abnormal Th2, Th17. That would basically react, but once a balanced my immune system, I could do the hormones. Just you see that with the growth hormone, releasing peptides and you'll see, it looks like that you're allergic to them, but we see that really in the people aligned patients, the the Cirrus patients that have really abnormal, abnormally, balanced immune system.

Speaker 2 ([29:33](#)):

And those are also the people that do not do well with vaccines and get harmed with vaccine. So we are starting a, you know, a vaccine risk mitigation program where we test and then modulate that, I mean, systems are, you're less likely to get any problems from vaccines. I'm not at any vacs or vaccines have done more for, for humanity than so many things. And they're a huge part of health and why we're here. But they, we need to talk about them just like every other drug, Hey, what's a good, what's a bad, what's the best way to take them. How do you lower your risk from vaccine injury? People want us to pretend, Oh, they're totally safe. They're a hundred percent safe, which is ridiculous. I've seen people's lives, they've got a flu shot and they're totally healthy. And they're bed-bound, and they're never the same, you know, so, but that's not a small, very small percentage, but it happens doesn't mean, you know, each person's decide whether or not to take each particular.

Speaker 2 ([30:45](#)):

So April your vaccine, so you're preventing very serious illnesses, but some studies show you have 30% increase in auto immune disease obesity. So you're, you're trading off those side effects for something that's really bad. So where is that point where you say yes or no? And it's, I think it's different for different people. So again, I'm not saying, you know, vaccines are, they're a good thing for a lot of people. A lot of them are good, but we may be giving way too many for this. Why are we giving hepatitis B vaccines to a newborn? Are they going to start doing drugs and being a prostitute? You know, when they're born I mean, it's crazy and shown to cause developmental

delay and that. So, you know, it's everything in moderation and and you know, what's the safest way to do the vaccines.

Speaker 5 ([31:45](#)):

Here's the question. And,

Speaker 2 ([31:51](#)):

But immune dysregulation, so, so many things associated with immune dysregulation, chronic infections, and that's what we see so much of, again, lime parasites, and you look at chronic fatigue syndrome, fibromyalgia, Sears, mass cell activation syndrome. They're just immune systems are just way off. So we can look at someone's immune system and really know exactly how sick they are. And they extended their symptoms to a very high degree of accuracy, stress, Oh, you have lectures on stress. Stress is not to lower the immunity. It does not. It modulates it, it increases inflammation that GH, but lowers that Th1 aging is big problem. We just keep going like this. Just biosis. It's a vicious cycle. And he got issues, cardiovascular disease, high cholesterol, post-traumatic stress. They basically have leaky brain leaky, gut PMs, even it's a resistance and diabetes. They all have immune dysfunction.

Speaker 2 ([32:56](#)):

They'll have low thyroid, even though they have normal levels, obesity, excuse me, they have, you know immune dysfunction, they all have low thyroid. Most have autoimmune. Thyroid is not detected on standard test depression, just dieting dieting will wreck your immune system and actually lower your thyroid weed if you seriously diet. And then when you start eating, normally your metabolism does not go back to normal. Even so when people say they've wrecked their metabolism, they have, unless you do something about it, neurodegenerative diseases, definitely migraines, inflammation, cancer, traumatic brain injury immediately just messes up the immune system, all disease of aging infertility. If people can't get pregnant, fix their mean system, give them some T3. Oftentimes some heparin, they have immune activation of coagulation and they get pregnant naturally. And again, the abnormal immune system causes low thyroid. That's not detected on center blood tests. So I spent about four hours doing these teeter-totter graphs here, so we can gaze at those for a second.

Speaker 2 ([34:11](#)):

So yeah, what's, what's going on. So the thymus of times is here on your breastbone and basically about at age 15, you get a sharp decline in the five minutes. It just starts, involuting just starts shriveling up. So you get that basically it controls your Th1, Th2. So you start getting this, so you start aging much quicker. And then, so here is the graph. I think you can see my cursor where right around age 15, 14, 15, you just get this big drop and the famous, and you just get this. And so meaning disease, cancer, degenerative diseases, neurodegenerative diseases just start happy when you get older people. Yeah. So we need to, you're 40. You're like, Oh my gosh, I'm getting all

this, this stuff. And especially at 50, you got a couple of years of bad immune system. That's when all the bad stuff starts happening. Now, according to the centers for disease control, the CDC, approximately 80% of age individuals are afflicted with at least one chronic disease as a result of the decline, a five MC related immune function. So again, CDC, 80% the, just the finest abnormality people suffer from at least one disease from that. And what actually speeds it up with obesity, calorie intake, toxins.

Speaker 2 ([35:44](#)):

So the final making the pineal gland an age. So again, many things have negative effects. And then the subsequent immunity, age, genetics, inflammation, lifestyles, huge toxins, pesticides, plastics, pregnancy, or times you're pregnant hypothyroidism, low growth hormone, zinc deficiency hear a lot about zinc, but the whole COVID thing. And then immune dysfunction can worsen and also be social with thyroid dysfunction. That's not picked up on or blood tests. You're much more susceptible to infections. Toxins are a big issue, mold toxins, you know, microtoxins plastics, pesticides where, whereas bombarded with all this stuff, EMS they'll give you started and all that. So you get auto immune disease. So this is basically that high TXU, your body starts attacking itself, increased cancer, risk depression, bipolar obesity with all that inflammation. So inflammation hypothalamus, you basically your brain doesn't you know, basically you're when you gain weight, you increase leptin.

Speaker 2 ([36:58](#)):

Leptin should go back to the brain, tell the brain, Hey, we got stored energy. We don't, we don't need to eat any, you know, we need to slow down the eating. We need to increase metabolism, all that, but the brain doesn't see it. So the brain thinks the body's starving. So it lowers your thyroid, increase your appetite, lowers your metabolism and tells the body to store fat. So inflammation, the brain does that. And PCLs got dysbiosis. We're getting all the chronic fatigue syndrome, fibromyalgia musculoskeletal degeneration. People become frail. They become weak and frail and they break a hip and that's how they ended up with pneumonia or whatever. And the nursing home, nerdy, Jeff diseases, and find their terrible immune system, terrible mitochondrial function. And they're all infected. It just infections these low line infects that no one tests for is speeding up aging so much. It is

Speaker 5 ([38:02](#)):

So common

Speaker 2 ([38:05](#)):

Stress. You know, we talked about stress. So you look at stress is not lower immunity. It modulates it and you get actually the cortisol protocol corticotropin-releasing hormone, which Shapeways AC T H to make cortisol, hugely stimulates mass cells. So stress increases, inflammation increases math cells.

Speaker 5 ([38:30](#)):

So you

Speaker 2 ([38:30](#)):

Want it and all these deal versus all these amazingly smart geeks that just are in the mass cell activation syndrome, which no one else would touch. And, but they're still just focused on direct suppression of mass cells, but you really want to look upstream and that's where you get the best effect. Should the people with Sears mass cell activation syndrome, chronic fatigue syndrome, Lyme and restoring that, looking at that Th1/Treg, Th17 balance, much more beneficial than trying to suppress the muscles, but Anna has to beans and those things, they work, they help, but you can do much.

Speaker 2 ([39:17](#)):

There was a misnomer you'll if you read, you'll see there's Th1 auto-immunity and for instance, type one, diabetes, multiple sclerosis, Hashimoto's a spot to be type one, work graves type two. But, you know, and I was taught that I'm like, well, why don't they respond to the same treatments? You know, like even this low dose naltrexone modulates the immune system it's type one or type two, wouldn't it be different? Or they found is that it was not, Th1 was actually, it looks like Th1, but it was actually a subset called Th17, which actually is more on the teach to side. So that whole, Th1 auto-immunity is completely in the wrong. It's a Th17 and DH one actually suppresses Th17.

Speaker 5 ([40:10](#)):

So

Speaker 2 ([40:11](#)):

Thymus ends again as that involutes and you stop creating Dima sins, that's when your immune system goes awry and you start feeling the effects of aging and you lose all that healing. Restoring properties is required to maintain normal endemic Krehbiel activity, mitochondrial function thymus works in so many different ways to a secondary messenger for healing. It's anti-inflammatory again, without the five minutes, you're just up here with so much inflammation, Metro Dockside, which dilates the vessels any oxidants boost STEM cells there times as needed to maintain healthy gastric mucosa. Also, you know, people are brain on fire now, or super stressed. They can't sleep, they got 80 D depression, it's brain inflammation. So it's that immune system that Th2 it's activating the microglia in the brain, the modulator that that brain inflammation goes away. It also binds and blocks the effects of toxins, such as mycotoxins. So people with mold toxicity and EMF sexually make it worse and actually speed the growth of mold by the way. And the electromagnetic fields are actually very activating the brain and the microglia. So it's like you don't get deep sleep. When you're around EMF, I recommend you turn off your wifi at night boost, natural killer cell function, which is the Th1 also Steiman sense, especially that small ones like, and beta four frag gets into the biofilms and bust them up.

Speaker 2 ([42:02](#)):

So gut brain access, you gotta think of it as it is basically a two way street. We're finding so many things that gut controls so many aspects of our health. And we've evolved with these organisms for millions of years, and we can't live without them. And we find when that gets messed up, it messes up the health of the body, but also when the, you have in a healthy body and messes up the gut. So, you know, they've done the studies where a thin people have a certain set of bacteria in their gut and obese people have different set. If you replace them, then the skinny people get fat and the fat people will get skinny, but they tend to go back to where they were because of the dual aspect where the unhealthy body actually also controls what bugs are growing in the gut.

Speaker 2 ([42:59](#)):

So it's much more complex than, Hey, just take these probiotics. And then when you get into the viral micro virome, there's, you know, we have more bacterial DNA than we do human DNA, and we have way more viral DNA than we have bacterial DNA. So the viruses that actually they're called bacteriophages, they're very specific to the bacteria. They don't harm us, but they go out for the bacteria, but they'll actually are a major part of controlling the level of the different bacteria in the gut. And it's a whole new, you know, we think like this whole new revolution of the microbiome, just wait until we start learning about the viral. It's one of those things would view the more, you know, the more, you know, you don't know, but if you don't leaky gut, so leaky gut is such a problem with all processed foods, all the inflammation you know, the many of the peptides, BBC, the thymus ins we'll fix the tight junctions and one of the best things to heal the gut member it's a two way street and just shows you're really a big part, but the Vegas nerve it affects, you know, did they say gut brain access, but it's really gut everything access because it works at really all levels with the brain will affect else, but it just inflammation, inflammation in the gut. You have inflammation everywhere else. And so basically unhealthy gut you're gonna, you're going to be unhealthy.

Speaker 1 ([44:46](#)):

Yeah.

Speaker 2 ([44:49](#)):

So just in summary, a wide range of diseases really have this commonality of this low Th1/Treg high Th17 , and a key is, is bringing that back to a youthful, healthy balance. And remember the gut brain access is a core contributor to overall health. And the peptides can control many aspects of this in improper functioning or deficiencies such as the fineness has gone or not replaced the five core bones and can really be a major contributor to all these diseases of aging. So that's it. I hope that gives you a little background, sorry for my raspy voice. But when you listen to these talks, so you kind of have a sense of you know, where, where everyone's coming from



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with, with the peptides. So again, I hope you're enjoying the summit and I hope you find it useful. And thanks for joining us. All right. Bye-Bye.