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Thank you, Integrative Peptides. Now let's jump into today's conversation. So how do you start peptides? Use your dose? Well, TB4, BPC1 cap, VID, generally start with the start of Bpc.

And I'll sometimes do three caps three times a day. But studies show nanogram doses work too, but you can't really overdose the patient. then you start adding things in like tb4frag and kpv you know it's in the nano k pv now then empty stomachs best because they have GERD have them over at the capsule put in water and drink it if they 3 to 5 milligrams of BPC and TB4 IV, especially with stem cells, NAD, Ozo, LDN, Ketamine, Bustylcholine, Vitamin C.

Starting Peptides and Dosing Basics

Works very well. Can't add KPV for mast cells or gut inflammation, epithelin, gut sleep. Rutherford's scretogob, cell 37 in the antimicrobial. Welcome to the Peptides and Longevity podcast.

Each week, we'll dive into groundbreaking science, innovative therapies, and the future of health and longevity. Alongside visionary physicians and experts, We'll explore how peptides, cutting edge medicine and lifestyle strategies can redefine the way we age.

Get ready to transform your health, optimize your vitality, And unlock the secrets to a longer, healthier life. Let's get started. Hello, this is Dr. Kenton Holk for Chronic Illness Associated with Hypothyroidism with Normal Thyroid Function Tests.

When you look at hypothyroidism, we built our practice on giving T3 and converted a general practice into all-cash just by giving t3 because it got patients so much better.

But we found that adding immune-monitory therapies with T-3, that combination is probably, if I could pick two things again, it would be that. And you will get patients who have been everywhere and nothing helped, and you give them those two thing, s and your like, wow, its kind of cheating.

How immunomodulating peptides can help with viral optimization, chronic illness, disease of aging. So what are peptide? They're naturally occurring or sometimes analogs of short chain of amino acids.

Generally, they're peptided for less than four to 50 amino acid in length. If it's longer, considered a protein. Difference between peptides and hormones is that the peptide will be more self-surface molecules and they basically work through a cascade of effects of secondary messengers where hormones go into the nucleus, change protein synthesis, slow on, and slow off, where peptids are quicker on and quicker off.

What Peptides Are and How They Work

They're also epigenetic but they tend to be much quicker and have multiple effects, which tends to mean that they're kind of more like like potent supplements is why they're safe when you have like one just effect it kind of counterintuitive but you know a lot of these medications they do one thing and it just screws everything up but these are also natural so your body uses them obviously all the different things that have been gone through evolutionarily alterations and optimization for you now millions of years.

So, the peptides are going to have a pleiotropic effect, no one effect and they can help so many things, but they're also much more precise and also very synergistic with each other.

I don't know anything you can't take them with. They can go with hormones, antibiotics, and almost every other treatment. So looking at the different classes, immune-modulating peptide, thymus and beta-4, so the thimic peptid, TB4 active FRAG, orally available, BPC.

Again, so these are going to modulate, increase that TH1, lower that Th2. Also, rejuvenative, repairing. Bpc, very repairing, anti-inflammatory. Kpv, amazingly anti inflammatory, antimath cell.

Huge wide range, broad range antimicrobial that's viruses, parasites, fungus. Both BPc and KPv will block the effects for instance, micro toxins or other toxins.

It prevents kind of overdose of so many things or it will also help a hangover because it prevents the toxicity of alcohol. So, you know, thymus and alpha 1, which as again, and so the thimogen alpha one was the byline of thimmogen to the metabolomics So we figured that out very, very similar to thymus and alpha-1.

Hepatolin and pinellium are the pineal gland, which kind of stimulates everything else. Sleep peptides, epidolin, pinelion, delta sleep-inducing peptide.

Now, this delta-sleep-reducing peptid, I'm not going to talk much about it, but it's not like a sleep pepti where you take it and you fall asleep. It's more of a lowers inflammation in the sleep center.

And it also works for chronic pain. It's the highest level in the gut. So it has a lot of effects. And then growth hormone, AOD, which is five-minute growth hormones.

The combination of peptides does work when people can't sleep, including myself, is you add epithelium or pinellium, and also epitelum pinellenum will raise melatonin levels back up to youthful levels.

You add adult sleep-reducing peptide and then either growth or hormone. Or a street of god i want to talk too much about street dogs but can i should go through and releasing hormone that was peptide like cdc of marlin and then or a o d which is a fragment and after about two weeks you'll see the start sleeping and it's calming so it lowers that information brain.

Particular brain peptides, no tropics, which increase memory, depression, anxiety, proptomatic brain injury, brain function, C max, c length, dihexa, Which is a analog of angiotensin 4. Cerebral isin, mentioned a little bit, which is multiple cerebral peptide.

They're all synergistic. Like these will help brain significantly. low-thermone anti-microbial peptides I won't talk too much about but it's can work very well for a lot of things.

In fact, with COVID, even if they showed orally, just take it oraly, and it's not supposed to absorb orali, but significant reduction in COVID symptoms.

Thymus and alpha-1, it is approved for antiviral, which it does have some direct antivaural effects, mainly by raising that immunity. So, the nabilon and thymogen TB4 have also raised BPC as significant direct anti-inflammatory effects as does KPV and also indirect or immune modulation, reducing inflammation, which reduces like the T cell exhaustion.

For pain, BPC 157 is kind of a go-to. Bpctv45 works for so many things. Well, nerve pain. I think it was B p c where they cut the sciatic nerve. It grew back if they gave them B P C.

If it didn't, they didn t grow back. Peptalp, inelium works, delta sleep. BPC will also keep people from getting tolerant to opiates, so they won't have to keep increasing their dose.

Ineliohypochlamy end organs, cretogons, ocuspeptin will stimulate mostly progesterone, but also estrogen, mitochondrial peptides, MOTC. kind of like a stimulator of mitochondrial function.

5-amino-1mq works through blocking an accessory pathway that increases NAD. And we found it very interesting that it works very quickly and amazingly well on OCD, one of our kids' They had OCD pulling out of our eyebrows.

They tried everything for years and years. Gave her 5-meter 1MQ with three days and stopped. Huminin, a lot of great studies are coming out on this, but it's called huminin because it reversed Alzheimer's and made them human again.

And so they call it huminine. It's hard to get and expensive. SS31, think of this as an intermitochondrial antioxidant. So a lotta neurodegenerative diseases just helping mitochondrial function, kind of like a super-mito-Q or PQQ.

Immune-Modulating and Repair Peptides

BPC157 and TB4-TB4FRAG also work. Melanotropic peptides, alpha-liposide-stimulating hormone, problem is very short half-life. and very expensive. Volantan 1 and 2. And the problem with these and PT-141 is you can get the tanning, which if you're young, you get, okay, your tan.

Like Volatan-1 and-2 is a Barbie doll peptide. You get increased taning, weight loss, and increased libido. But if your older you tend to get dark spots and it's not a good thing.

PT 141 you know about increased lipido, get nausea with it. KPV is the end terminal, just the three tripeptides. So it is orally available. and more potent anti-inflammatory than its mother compounds.

And it may not work through the melanocortin receptors. They're not quite sure. Side effects, very low. I would say nausea really with the PT-141. Sometimes you have some local reactions.

But I found that sometimes where you think someone's allergic, like when I was in a flare or immune dysfunction, I would do an injection or whatever peptide.

It's a big red mark, which looked very allergic. But as soon as I got my immune system under control, it didn't have a problem. and immunity. They modulate the immune system.

Again, they maintain that Th1T reg, the Th2 balance, opposed to pathogenic where you get the shift. There's a lot of repairing, restorative properties, need to maintain normal anti-microbial function, boost mitochondrial function.

stimulates wound healing, very anti-inflammatory, increases nitric oxide levels, stimulants pegocytosis and neotophagy, increase antioxidant production, stimulate stem cells.

So a way to give stem cell is we always give them peptides, IV, then send them home with it because you get so much more bang for your buck when you do stem-cells.

BPC, TB4, alpha l l thirty seven and they're probably the same as with the pc give me five are the best thing for the get ready to get because it works on it's bi-directional so work on the gut brain part of the brain that are.

And again, those two work on the tight junctions, reducing microglial activation, whether it be in blocks, the inflammatory effects from toxins, microtoxins, neurotoxin, EMFs, infections, and alcohol, boosts NK cell function, breaks down biofilms, especially TB4-FRAG and LL37 and KPD because they're very small, they'll break up the

biofilm and they are very antimicrobial.

including fungus. With sear, you know, there's in terms of nasal sprays and using azoles, a big controversy on that, but you use the peptide and you get a much better response without side effects.

And just all the things that TB4 does, it kind of sounds like snake oil because it helps so many things. This is a show that Biomulin, although they all do very good for herxheimer, Imagen is, again, more of a TH1 booster, so it's more like thymus and alpha-1, normalize absolute counts of T and B cells, enhance time dysfunction, increase white cells.

So again very TH-one-ish. improves immunity, high security of infections, with reduced number of days of fever, length to stay in the hospital, very anti-cancer, reductions 1.73-1.4 fold, increased survival rate.

TB4-5 again is just these four amino acids of TB 4. And these are different domains. There's other ones as well. One study showed it's very mean-modulatory, but we're trying to figure out if it absorbs orally and we want to get that on that before we do anything with it.

So again, TB4 is 43 amino acids, so you can't take it oraly. It has multiple domains, four amino fragments, c-related SDKP, through the workhorse of TB 4, it's mean-mod for angiogenic, anti-inflammatory, pair functions, It's more potent anti-fibrotic, great for cardiac, you know, CHF, cardiophibrosis, pulmonary fibroses, chronic kidney disease, and it's great at lowering human joint sphering growth factor beta, which, again, we talked about as causing T-cell exhaustion.

It is 10 times as potent as Tb4 by weight. Does not stimulate mast cells or lay a bioavailable. and it can cross the blood-brain barrier and penetrate biofilms.

It again inhibits the TB4, even just during growth factor beta. Also reduces the immune activation of coagulation, but a major problem can be fixed. Here it showed that basically stopped the neuronal loss and increased spatial memory.

We showed the T-thymus and beta thymosome peptide active fragment could increase adult neurogenesis and may be highly relevant in preventing various neurodegenerative diseases by replenishing damaged So just some different studies that was made for neurologic injury and neurology diseases, for peripheral neuropathy, traumatic brain injury, reduction in microbial activation, so all these neurodegenerative diseases and traumatic reverse cornea artery nothelial damage which is huge after chemo great for chemobrain which a lot of all the things well in mitochondrial peptides and mean modulators because it puts chemoputs all those cells into T cell exhaustion and senescence and people that they don't do anything about it and it also makes them all prone to relapse like the most An important marker for if someone's going to relapse or not is their natural killer cell function.

I don't know a single oncologist that checks that. Very antimicrobial, good for eye infections, has significant antifungal effect against toxic mold. One study mice were inoculated with aspergillus nasally.

Those given to me for 14 days found that TB4 direct antifungal effects, along with the induction of mucosal barrier protection to less stuff got in, and a reduction of lung inflammation.

And also, if you think of COVID too, in the study show that when you test the lung, shown to be no TB 4. So either it's suppressed or used up, prevents and treats colitis, disrupts biofilms, too much helium in gut.

All those work for SIBO and in-gut issues. Sepsis, I've mentioned that. They reduce microglial activation, great for NASH as an APC, the moron sepsis.

So it stopped the parasites in the stem cell loss that occurs with sepcis and also prevented the perivascular leakage. You know, people get all their flooded lungs.

And so, wow, it sounds like ideal for COVID, doesn't it? For MS, we use a lot of it for MS. It's shown to be

significantly effective. a number of studies on that.

When given this after MI, you can see the TB4 patient, the rejection fraction, so significant improvement there. Combined with T3, it's wonderful. The TB 4 CRIAG decreased the amount of inflammatory cells in cardiac tissue, less cardiac rupture, and less mortality, 56% to 31%. We found that it works really well for post-COVID myocarditis, often very quickly, also with DPC and KPV.

And if you can do some stem cells or exosomes, often very quick recovery. And also for insomnia with a lack of smell, that returns often, very quickly as well.

Sleep, Brain, and Mitochondrial Peptides

This is just radiation induced, all your pathologists there. So, cardioprotective and diabetic patients restore, improves, restores diastolic dysfunction.

So TB4FRAG is very potent anti-fibrotic. It also affects the cardiac cellular channels that for direct communication, and BPC will do this, like Bpc157, great anti-arrhythmic, and one of our employees' husband came in at AFib, which gave a big shot of PPC and is broke as AFB.

So it prevents fibrosis, again reduces that transferring blood vector beta, also showing for ameliorates chronic kidney disease and diabetes and how big of a problem is that?

Press tumor function, you'll see some studies show it will increase TB4. I must be the fool with cancer, so people are concerned, but it's the body's trying to make more and also some cancers will make TB 4, But it is a totally different molecule.

But when you give TB four, no studies showed that increased cancer. action safety profile. They gave it IV to healthy patients a thousand times. The dose that's given, they couldn't find any toxicity.

So over a 1,000 milligrams and we're doing like 200, 500 micrograms. Stimulate stem cells, BPC, I say from the gastric juice. Some people think it was a gut hormone, but it really, the oral dose equivalent to any systemic administration.

People though, like shots, some people like oral, You know, you're going to see that, but I think just many people think the oral works better as the shots, whatever people like.

So it works on almost every autoimmune. It's kind of the go-to peptide for so many doctors because it work. Increased go through on receptors. And it's a homeostatic.

If you have high blood pressure, it lowers it. Low blood-pressure, raises it, if you are hypercoagulable, makes you less. if can't coagulate, make it more.

An output form, so prostate antiviral as was tb4 and alpha form a cycle of the year or treatment of herpes simplex wide range of cardiovascular approved heart hypertension post my arrhythmias short and long qt interval.

Here's a quote, certainly effective, healing process, gastric, you can see what their reach is. The treatment aimed to induce and then maintain healing of CHF in addition, the toxic studies indicate safe profile.

Certainly be effective on central and peripheral nervous system pathologies, including Alzheimer's, neuropathy, spinal cord peripheral nerve damage, mood disorders, autoimmune disease, pain, mood, so these show it's a good activity against, whatever is tested against it works.

There just haven't been a lot of tests, but shown to work against all these. I mentioned that. So this was nerve degeneration, nerve regeneration. A traumatic injury of an existent failure of spontaneous helio-pransected rat sciatic nerve.

But when they gave BPC, it healed. It counteracts toxins, microtoxins, neurotoxin, toxins. Clostridium reverses mitochondrial damage. And it kind of acts somewhat in terms of pain, like an NSAID, but it counteract the side effects of NSAIDS.

Gut-brain access. it's like the cystic core. Therapy, rib coagulability. Ligament healing, urinary incontinence, so it works for GER. So it tightens the upper esophageal sphincter and lowers the lower esopagial or the low gastric sphthicter, and tights the esospagio-gastric so you don't get the reflux.

Works the same for incontinent. Just giving oral BPC can fix both of those. We see that, not uncommonly. But women don t tell me about incotinent, I didn't know it was that big a problem until some women were telling me.

So oral BPC was tested to experimental models of AC with inflammatory bowel disease and multiple sclerosis. So they gave it for both and they were equally effective for gut and brain.

Orally safety profile can't find a toxic dose. When you look at a thousand times a dose isn't toxic, it's safer than water, caffeine, alcohol. We will get right back to the episode, but first a quick thank you to our sponsor, Integrative Peptides.

If you are enjoying today's conversation and want to support your health and longevity, visit integrativepeptides dot com and use the code PODLIFE for an exclusive listener discount.

That's integratvepep-tides-dot-com. Code P. O. D. L. I. F. E. Now back the the Let's talk about Vilon real quick. So really combining the thymic peptides, whether it's Vylon, Vimelin, TP-4, TB-5, and pineal hormone epitalin, you get gene expression here.

It stimulates kind of anti-aging. genes and lowers the aging genes. Some overlap here. Thymogen, like thymus and alpha-1, will reduce cancer significantly because it's raising that Th1 much like Thymosin alpha 1. So also slowed aging, shift reduction in tumors, also less metastases, number of tumor-bearing rats.

You can see basically as they get older, ups that. So thymogen inhibits spontaneous personagenesis and radiation-induced sub-blocks, prevents the formation of cancers, inflammatory diseases of the female genital system works very well.

So immunity again works for endometriosis. Endometreosis, you know, we think of it as a hormonal issue, which it is, but it's also a significant immune and autoimmune condition.

And so these modulating peptides work well for endometriosis. Affected sinus progression, anti-duberculosis, diamond gene, the treatment of type 1 diabetes, so reserve signs of secondary neurodeficiency.

BPC, TB4, and Broad Therapeutic Uses

Clinical effect was 94% laboratory effect in 83% of the patients. So here again, suppression of cancer, a lot of that. Increases lifespan, and again lower switching, it lowers to its regular effect or beta.

helps asthma, improves sexual function, at least in rats, so got to work for attorneys, right? Helps with emotional stress, as does the pineal hormones, and most of the peptides do help with stress.

So by a lot of metatarsal primate peptide and a pineo, Peptide, you know, for heart, so inhibited pro-oncogenic genes, help with coagulation, with diabetes, health, digestion.

Here is just showing that ptalon, vinolin, vimogen, bilon and they all lower cancer risk. How about MSH? real quick, KPV, which is the tripeptide portion of alpha monocytes, too many hormone.

Well, it's healing, organic protective, also metabolic stress, already bioavailable, very anti-microbial against candida, staph, but really low levels.

So C-Terminal, the special attention exhibits in vitro and in vivo anti inclinatory. It's one of the paracom panel without the lanotrope, is tanning from the central anti-inflammatory compound of the terminal KPV.

It's also such for direct and microbial efficacy. Therefore, short molecules have tremendous potential in development for clinical use. Here's showing went against the conazole.

This is the KPB here. So I'll perform that and also work for staph aureus. So, you know, looking at kind of these combinations work for all these things.

That's a nice thing. It's kind, there's nothing really they don't have a positive effect on. Well, again, they all we'll suppress mass cell, which is a major issue.

Everyone's sick and everyone has multi-system illnesses. And I'll go through this quickly, epithelium pinellium, probably ultimate anti-aging peptide, especially when you combine it with a lymic peptides, increased pineal synthesis of serotonin, melatonin.

Restores telomere length, shows down age and reproductive. I talked about the rat study. Increases T4, T3 conversion and thyroid transport and effects the adenases directly.

Improves glucose tolerance, lowers triglycerin and insulin levels. Consistently increase longevity, mortality, and reduction in cancer. Improves the hyperclinical pituitary dysfunction seen in disease and aging.

Revives and aids thymus in poorly functioning natural killer cell and T helper cells by improving the cell's ability to screen interferon gamma, which should diminish with age.

such as normalize cell-mediated immunity, okay, through CD8 and NK cells and thus results in a decrease in mortality rate among elderly people. Other effects such normalization of antioxidant protection, you know, static system.

Like POTS, we just give them these peptides and Pots goes away, fixing the hypothalamus pituitary hormone access. So it improved all the peripheral hormones, thyroid, growth hormone, IGF-1 cortisol, testosterone.

In this CFS, the pineal hypochondria dysfunction due to hypothalamic inflammation and mitochondrial dysfunction. So, it all goes together, inflammation of the hypothalamus.

And this is an interesting study. They took basically testigen and epitalin and they took out in birds that how to put your mood so okay you can't make a six hours in a race i read levels but it didn't erase the f h levels from where and if a talent thing to work better than the test agenda order that so it's great way to fix.

thyroid, which we're talking about. We had epithelium thyroid and thymus and synergism. There's an increase in mean lifespan, and then this is increased immunity.

So the pineal and the thimus. They looked at the effects of thiaminulin, so thionic peptide and pinellial epitalin. Mesquite over six to eight-year period and 206 elderly patients waiting for They just treated in the first two to three years.

They found convincing evidence showed the ability of bioregulars to normalize the basic function of human organism and proven to be cardiovascular, endocrine immune, and nervous system, homeostasis and metabolism.

Obstetrics and restorations accompanied by a 2 to 2.4-fold decrease in acute respiratory disease, reduced incidence of clinical menace of heart disease.

Hypertension, osteoarthritis and osteoporosis, decreased mortality, basically two-fold in the simulant tree, 1.6 to 1,8 fold in epithelium, and 2.5 when they're treated with both.

And in a separate group that were treated annually for six years instead of just for the first two years, they had a DHS mortality that was one-fourth compared to controls.

and the neuropeptides. It's a C-link and C max. They're no tropics, improve brain function, whether it's traumatic brain injury, just neurocognitive function or cognitive disease, neurodegenerative disease.

C-max is a little more stimulating. C length is more calming, helps people deal with stress, both very safe. And again, cerebral isin, inflammatory mast cell inhibitor, been used for 50 years maybe, lots of studies and approved for TBI, Alzheimer's, stroke patients.

Been effective for autism and Asperger's even at very low doses, historically given intravenously, but now Orally, which based on an EEG study shows that it works.

I mean, we're with the cerebral isonoil. Probably get the biggest feedback, positive feedback with it. So just after a single dose, EEGs changed significantly and they had significant improvements of memory after single-dose.

They're all improved memory and attention to mitochondrial peptides. Again, I love them, but I'm not going to go too much into them. they're a good part of the treatment and they kind of just fit with everything.

Everything works together. Talent promotes healing and longevity, BPC, kind the go-to, do everything, proves abnormal cell danger response, contracts against numerous toxins, JPV, great anti-inflammatory.

Then Nano-KPV is about 30 to 50 times as potent, and that should be available soon. It costs a tremendous amount of money to develop, but works great for autoimmunity.

Very synergistic with the other peptides, delta sleep. Again, anti inflammatory improved mitochondrial function, the nootropics we talked about, mitochondria peptide we've talked So the sicker the patient, the more you want to use T3.

I use mainly straight T-3, so we use a T4-T3 combination and natural. But the stick of the patients, you need to intervene because if you just give what the body's normally making and they're not using T 4 appropriately, we want give T 3. So we typically don't use armor.

You know, my patients are sick and that, but they can't utilize T four very well at all. The patient's healthy. armor, natrothroid, whatever, or compounded T4-T3, and you can adjust it.

Thymic and Pineal Peptides for Aging and Immunity

So our standard, if we do T-4D, we would compound it, which has higher levels of T3 to T 4, because otherwise it's one to four, mostly a T four product.

It's an immune modulator too. And it will improve thyroid function in the… I find pituitary improves central hypothyroidism by giving T 3. Very interesting.

So chronic illness, basically everyone's low. So really with diagnostic and symptoms, physical exam, we check everyone with basal metabolic rate. We check their relaxation phase of their brachioradialis, which the British Medical Journal showed was a better test for blood tests, body temp.

Look at the T3, diverse T-3 ratio should be greater than 12. Free T 3 should above 3.5, reverse T three greater mean. I mean, these are medicine. Everything is on a spectrum.

It's not like at 2 they're great and 2.1 they are terrible. But if TSH is above 2, the pituitary is wanting more thyroid, so they need thyroid no matter what the other ones show.

You'll usually see low normal, pre-T3, normal TSh, high normal pre T4 and above average, reverse T3. If SHPG is

less than 70 or 80 in women or less 30 in men, it's a marker for the thyroid.

A relaxation phase like a reflex, should be faster than 110 milliseconds. If leptin is greater than 12, it's a marker for insoures. This is an immune dysfunction and lepton is needed to make TSH.

So it is about 12. You can't go by the TSA. They have high C4A, esimicadiam protein, which goes up with parasitic, bushy bartonella infections. It can go with allergies, but let's say we see it with infection.

And oftentimes it s high normal, then you treat. There's an anti-malarial, antiparasitic, and it just goes off the chart. You just made the diagnosis and something that's very hard to detect.

Human testosterone growth factor beta is T2, VEGF. We'll see with sears, it's supposed to be low. And we'll what part of the nullette goes up. The problem is Quest screws this up, then if it comes back to zero, It just didn't process it right.

So you have to have some value there for it to legitimate. Free T3 to free T4 is less than 3. They have dysfunction. Any antibodies, make sure the iron ferritin's good.

If they're not elevated, you wouldn't see. Their lipids, iodine, CRP. You saw we're just leaving the normal range. CRPs lower the T-3 levels, vitamin D.

So CD4, CD3 should be greater than 2.5. And again, just look at all this other stuff. Always check an MTX or CTX. and show how much bone they're breaking down because if you suppress their TSH and they get osteoporosis, they are going to blame you because they don't get it.

Even though I can show you meta-analysis that T3 does not cause osteo-prosis in any woman receiving estrogen or is pre-menopausal, slight potential reduction in post- menopause, but you give them vitamin D and hormones and their mineral bone density is going to go up.

For instance, the antidepressants, these tertiary uptake inhibitors cause more osteoporosis by far than suppressing the TSH, but no one mentions that, do they?

Any positives on the coagulation markers here that you can see? And if you want a lab slip with all the codes, you could email us And so here's kind of the key labs I just put down.

So look for low natural killer cell functions, pain in the ass to get, and they screwed up a lot. Only certain quests do it. Elevated C4, I'm looking at that TH2, needs to go to national Jewish, elevated urinary growth factor beta.

They tend to screw these up, which is the biggest problem. T3, reverse T-3 ratio, that should be greater than 12. ECMH cation protein, talked about that, immune activation coagulation, so these are kind Main, most telling, these are very helpful.

Any band on the Western blot is significant, no matter what you hear, I'm telling you. In the VEGF, we talked about low IG subclasses. These will lack TH1.

Just real quick, 42, a woman comes complaining of inability to lose weight, ongoing depression, arm antidepressants, fatigue, and muscle pain. She's diagnosed with fibromyalgia, bipolar depression and type 2 diabetes.

Normal patient, right? She's on Metformin and Effexor, Vicodin for pain, and Lipitorch. She has tried numerous endocrine presence and lyrical without benefit.

Her labs show a TSH of 1.2, a Free T4 of one point seven, so the upper range. TSh looks okay and a free T3 of 2.7, maybe a little low, along with positive IgM Western Blot and four bands in her IgG for Lyme.

So, what's the chance this patient has low thyroid retributing to her symptoms? Well, being overweight, Donners et al., she had a 36% chance of being low-thyroid.

Gordon et. al. showed all obese patients had low thyroid function, found that giving 50 mg of T3 to obese patient partially compensated for their inherent thyroid deficiency with improvement cardiovascular risk factors, which is cholesterol and its resistance.

Their chronic dieting has been shown a 50% reduction T4T3 conversion with no change in TSH. And libel found 25% lower metabolism goes with chronic diety.

If they go back to normal eating, it doesn't improve for years, years and years. So you need to intervene. Diabetes, again, 42% reduced T2T2 conversion.

She's depressed, eventually giving T3 was safer, more effective than antidepressants. Statin, she's on the statin article, because she lowered TSh. pain meds both shown to reduce type 1 diadenase so reduce T4D conversion in the cells and the periphery.

KPV, Nootropics, and Anti-Inflammatory Support

They increase D2 so they increase pituitary so your TSH drops. Increase D3 so you get high reverse T3 and low transport into the cell. Hock et al, a low normal thyroid system with higher cardiovascular risk than having high cholesterol, hypertension, diabetes, or even smoking.

So low, normal, higher than those. Positive Lyme disease, so they all have immune dysfunction, mitochondrial dysfunction. Excessive oxidation, cell danger response, decreased thyroid transport, subcortipituitary, and central hypothyroidism.

So she was found at a low body temperature, which makes sense. Inability to lose weight, dry skin, constipation, coarse skin cold skin and extremities.

Zawiski showed that a combination of more than five very common symptoms is possible at the value of greater than 96.9 percent. Visually she had a slow relaxation of her ankle reflex confirmed with the thyroflex.

There's 190 shown by Maradally, better term of hypothyroidism than elevated TSH. A low resting metabolic rate is 22% lower than expected. Our T3 ratio is 3.7, should be greater than 12. So it correlates with low tissue level of thyroid.

Or 3 to 4 ratio of 1.5 should greater 3, so you may have to adjust those. Or if her labs reveal it's SHPG at 32, well then more confirmation that either she's low thyroid or low estrogen or both.

Average blood sugar is high. Again, diabetics have the low conversion. Her leptin was very high, you'll find people with lepton resistance, even if they don't have insulin resistance.

And they can't lose weight at all. So insulin goes up when you gain weight, tells the body to stop burning fat, increases thyroid, decreases the appetite, it tells a body burn fat.

When you get leptin resistant, much like insulin resistant where insulin is high, your brain is not seeing the lepton and thinks the bodies starving, so it does the opposite.

Let's see, this CRP was 3.2, saw that. She had immune activation of coagulation, she had abnormal CD4, CD8, high triglycerides, and metabolic syndrome.

This was a CFS patient. So I had a doctor who was going to work with us, but he was an hospitalist and had to finish out his time at the hospital. And he had patient ICU with heart failure, which was totally fluid overload, attended, low oxygen saturation, was on pressors, could not get out of bed, barely could move, do anything, had

ongoing arrhythmias, and was in and out a fib.

So the patient had low normal TSH and high normal t4. That's what they checked. Straight into hospital, interpret those as adequate or borderline high thyroid levels, right?

I told my guarantees patient is going to have extremely low thyroid level, check a t3 or a pre-t3 and a reverse t-3. I should probably do all the other stuff, but it's very hard for me to get less.

And I see him in battle to give those. We showed him how to have low T3 with high reverse T 3. He was kind of freaked out to do it, especially if the patient had arrhythmias.

I reviewed the medical literature with him. The treatment was titrated up. You could not believe the miraculous results. Patient Ejection Fraction, Fluid Status, Cognitive Function, Autonization.

Overall, Dad has dramatically improved. He's able to wean off the pressers, didn't need supplemental options, his arrhythmia is resolved. he was able get out of bed and walk and he said it was the most practice thing he'd ever seen.

If he had any doubts about us, they were gone. But then he went off rotation, you know, they're on seven days and on five, and the endocrine group came on, why is the person on T3?

And they stopped it and he back to being fluid overloaded. And he spoke to the Endocrin team as they, he could never convey to them why he needed it.

Diagnosing and Treating Low Thyroid in Chronic Illness

At that point he said he was so disgusted with mainstream medicine, but at the same time excited to pursue more evidence-based cutting edge practice. I won't read this, but this was from a doctor sending us an email from her patient.

She had traumatic brain injury, basically took BPC and cerebral pep, which is the whole cerebral license, and got much, much better. I couldn't believe it.

This was a five-year-old with Crohn's disease, fed to numerous conventional GI immunologists, as well as many alternative practitioners. She had a poor response to all the meds, couldn't tolerate them, they didn't work.

she was on high-dose probiotics, a few other supplements, she had severe bloody stools and was told she needs to have her colon removed at five. After probably recommended oral BPC, TB4 frag, KPV, LDN, Ozone, oral ITG, some other therapies, the 101 do one thing at a time, so we did BTC.

And she came back and said, oh, about 30% improved. Then we got the labs back, low MK cell function, iron levels, she had a high human tissue growth factor beta and C4A.

She founded Hashimoto's with TSH at 5.9, low normal freaky 3, mid-range freakey 4, high normal reverse T3, and low growth hormone. She was given T-3 and ramped up and TB4 FRAG.

We started with growth hormones as cretogobs. She had a significant improvement of mood and injury along with decreased abdominal comfort and bloody stools when she had KPV and increased her T3.

She was updating very well, very infrequent in any GI discomfort and extremely rare bouts of any bloody stool. And it turned out, she didn't know, but she was very good friends with a co-worker.

And they went to dinner at their house. They said, I found this Dr. Hoffman, old man, and oh my God, it would save my daughter from getting a colectomy.

And he's like, is it Holthorpe? Like, you know him? I guess I worked with him, but so it was kind of fun. So how do you start peptides? Well, TB4, BPC1 cap, VID, generally start with the start of VPC.

Then all of a sudden I'm just doing three caps three times a day. But studies show nanogram doses work too, But you can't really overdose the patient.

then you start adding things in like tb4frag and kpv you know it's in the nano k pv now then empty stomachs best because they have GERD have them over at the capsule put in water and drink it what they 3 to 5 milligrams of BPC and TB4 IV, especially with stem cells, NAD, OZO, and LDN, ketamine, bustial choline, vitamin C.

Works very well. Can't add KPV for mast cells or gut inflammation, epithelin, gut sleep. Both are in scretogob, cell 37 in the antimicrobial. She's kind of started adding things, oral cerebral lysine, other nootropics, mitochondrial peptides, start low and afford thyroid start load, titrate up.

T3s start at 10. If they say they're sensitive, like start it at 5 or even less. Because you can always just push it up quickly, but it will save you.

Again, very rare. But some people have idiosyncratic response, and they'll respond in the tiniest doses like crazy. And those people, interesting study showed, they are likely to have HHV6.

So you just don't increase it. They have increased pulse. Although a lot of them start out with increased poles because they have autonomic dysfunction.

Or if you want to use a T4-T3 to start with and then you can switch to T3. Here's just a overview of kind of peptides. These are available orally, you know, what they're good for.

Thank you, hope you enjoyed it and learned a little bit and how to hopefully get some of your difficult patients better. You can do more training to kind of when it's set in, but hopefully some that stuck.

So thank you and thank Joe. I think you get a great organization and always quality lectures that I know everyone just has great things to say about it.

Case Studies, Practical Protocols, and Closing Remarks

And be available to answer questions on the panel. Before we wrap up, we want to thank our sponsor, Integrative Peptides, for supporting this episode.

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