Introduction to cancer and peptide therapy

Well, Dr. Holtorf, this always a joy and pleasure to chat with you. And I'm so excited about and you know about this subject because I feel this is this is kind of like the next frontier in understanding how we can battle cancer.

Yeah. I mean, it is it's exploding, you know, and, you know, the U. S. has the highest incidence of cancer. Late. I thought we were the, you know, the superpower of health care.

And we're second worst in the survival rate behind ten, I think it's Zimbabwe or Senegal or something like that. So it's like whatever we're doing, we're not doing it right.

It is fascinating with that money that that's poured into this field and the lack of production. I mean, if it would have been a normal company, I mean, they would have gone under and they would have been kicked out and bankrupt and and moved on by now.

And they got all these subsidies. And I won't go in too much into the, you know, kind of falsifying of data and how the studies are designed to tweak the results a little bit.

Or remember, there was a drug program four years ago for prostate cancer and it yeah, they the people live six months longer and they used to have to use a huge population for it.

And they were sick as a dog and, and it was like 200, 300,000 a month and they got approved and they just so happened. Yeah, they about over half the people on the committee that would recommend it or not happen have stock in the company.

Fascinating how that is business right now. Well, I want the listeners to kind of understand you're that the breadth of your experience is Dr. Holtorf as the founder and director of the nonprofit National Academy of Hypothyroidism and Integrative Sciences, which is dedicated to the dissemination of new evidence based information to doctors and patients on the diagnosis and treatment of hypothyroidism and balanced integrative diagnostic and treatment protocols.

He's been featured guest on numerous TV shows. He CNBC, ABC News, CNN, Extra TV Discovery Health Learning Channel Today Show Dr. Dean at Old Glenn Beck.

Nancy Grace Fox, Fox Business, ESPN, Rush Limbaugh. I mean, the list goes on and on. WebMD, the Wall Street Journal, L. A. Times, all time. Howard Stern. Howard Stern. Too.

Dr. Holtorf's background and clinical experience

And that must have been a kick. Yeah, it was funny. That one, the man show and Mythbusters where they were the I guess the funniest clips. I love it. And so tell me a little bit.

I mean, you're you're my you on integrative peptides. You know that company your wheelhouse I mean in addition to hypothyroidism and hormones, I've also immune system function infectious agents, you know peptides it's like yeah your masterpiece if it's somebody we we need to lean on in regards to understanding peptides.

You're the man. Yeah. Thank you. So you're very kind. But, yeah, there's a lot, a lot of good physicians out there that use them. They've, you know, they saved my life is the thing.

My big thing was, was thyroid and because we got so many patients better, like when I got out of medical school and residency, I was very sick and I couldn't see a patient was so exhausting.

So I went into anesthesia because they're asleep. I'll talk to them. And I realized I hate this and I was deteriorating that I went into family practice and I'm like, This is getting tough and it's ingrained in med school.

Do not go to alternative. It means no evidence. Yeah. So you listen to him right? You know, I've been to numerous university doctor, especially. Oh, you're just stressed and you can't find anything because they do a CBC exam panel and a cholesterol and all you need to statin, you know.

And so when the family practice and the first thing it was take over a insurance based family practice and converted it to cash within spend long with patients better care within probably 18 months by doing thyroid optimization or optimization.

And it just made such a difference. I was just a you know, believer in time released right then was doing fine. I moved back to California, we started a beer company, we had a hangover free beer.

but our business model was not very good and moved back to California. I went through a stressful divorce and just had Lyme. babesia Bartonella went into heart failure.

My heart was just fibrosis. From my human transient goes, I could beat up, I couldn't stand up, I couldn't go upstairs. And the cardiologist said, maybe in ten years you can get 10% better.

I'm like, No, I am not living right. It's horrible, you know, walking or bent over. I said, okay, I'm either going to end it or I'm going to go find a treatment.

So basically went around the world, a lot of things that helped, but nothing like a this is it. And then I was in Belgium and did a bunch of peptides.

I didn't really think anything would happen in like four or five days later. I just noticed I just walked up the damn stairs, you know, upright. I'm like, we went, I mean, backtrack.

So what did I do? And it's funny, when I went to the cardiologist and said, you know, standing up and and it echo like you're basically normal. And he goes, That's nice.

I'm like, Did he ask me what I did now? So it's, it's funny, but so I'm very grateful at peptides and again they changed my life and were able to plan and bring them in to the U. S.

legally and as a trained physicians that it just makes the practice so much easier because you can get these sickest patients from, you know, basically A to B instead of, like I say, we treat a lot of Lyme and, you know, and mystery illnesses and nerdy diseases and, you know, and also hormones and stuff.

But we keep getting this the sickest of the sick, but that it just makes it so much easier and it brings back the pleasure because you have you see so many, you know, basically spectacular responses and they're like, oh, thank you so much.

I love those groups of peptides. Yeah. So yeah, they're a big fan and we're progressing and how we're delivering them and ways to tweak them legally. So they're natural using natural isomers that are much more potent, much longer, half lives, much more bioavailable.

So they're, you know, unique in the industry and I'm excited to get to do research and you know, and a lot of this research on peptides is 40 years old from Cav's and who was giving it to the Russian army first, then the Olympic team.

I think that one team, the women's swim team, they all had deep voices that why are swimmers all have such a deep voice as well. We came here to swim, not to sing. So.

So what are what are people I mean, what what do peptides do in the body? I mean, why are they so effective.

Yeah. So, you know the question, know what?

What the heck is a peptide. Well a peptide is a chain of amino acids naturally occurring or they can be altered. And if they're arbitrarily it depends who you ask.

If they're longer than 40 or 50 amino acids are considered a protein, they were different than people using like the B2. Atari was kind of the master controller of the body.

But we found that these peptide, even tiny peptides like two amino acids dipeptides. No one thought anything or how could that do anything to me? Very powerful.

So the ones that, you know, were a oral supplement company and so and long peptides are very difficult to get to absorb to be bioavailable.

What peptides are and how they work

Now BPC is 14 BPC 157 is kind of the go to one we can talk about that. It's unique in that it is orally bioavailable equal potent to injection. It's that they're actually made in the gut.

So it makes sense, but we do other things that if the body is, if there's a peptide in the body that the body feels is critical, it will tap it and protected from the digestive enzymes.

So settle at one end and imitate the other and it becomes resistant to the digestive enzymes and is much more bioavailable, much more lipophilic. So it crosses in across the membranes unless polar where because it's interesting you hear all this now because doctors are all confused what's is stable BBC and the the owners of the patent for the acetylate the BPC it ran out so they came up with an arginine salt and they said, oh, it's more stable in the gut.

Even though multiple third party study said the ozone inflated was. And if you omitted 80 more but then you could use an entire code if they if that was the case but largely BBC is is pretty stable in the stomach but as soon as it gets in an alkaline environment that separates and it's just prone to digestive degradation, it, it's much more polar so it doesn't absorb as well.

And so a lot of people that use it are adding like these excipients like snack that break open the tight junctions and to get it in there like, well, wait a minute, you're treating the gut and you know, most people have increased permeability, leaky gut, and you're breaking it open each time you give it.

You know, for a healthy person that can heal quickly, maybe it's okay. But, you know, they've been banned in a number of countries and it kind of seems to defeat the purpose.

But I want to bring up because the big question now that that we hear. So in regards to, you know, cancer, I mean, how what kind of role can peptide play?

I mean, because obviously with cancer we're dealing with, you know, tissue that all of a sudden kind of lose its a appropriate communication signaling.

I know it's a huge factor. And also in regards to immune system function, we have now things called immune senescence where the immune system is this is not as effective and functioning while you know it's kind of in that, you know, just hanging out kind of immune system function.

So what what kind of role does peptide play in and cancer. Yeah. I mean there are some, you know, peptides that directly do some things, but most of them are modulating the immune system and we'll go back to you know, we'll break down the immune system very simply.

It's very complex, but you have to have a simplified model, the one we found that is most clinically relevant is

looking at one side is th1, and you put Tregs in there which is responsible for killing intracellular infections and cancer.

And the downstream effect of that is natural killer cells function and that's the cell, that is the biggest one that monitors the body for cancer and, you know, cells that kind of go awry and basically, you know, kills them and and basically recycles all the cellular goods.

And then th2 is the other side, which is responsible for extracellular infections. And then also on that side of like T h 17, which tends to be the auto immune basically segment.

And now within the thymus here in your breastbone controls that balance. And the problem is it starts in the limiting and just shrinking by about at age 15 even.

And it just goes down and down and down and it hits its nadir. The lowest part right around between 35 and and 45. And that's when you start getting so what happens is it does this that th1 drops and now you can't fight interstellar infections in cancer or in reactivating infections.

Your body's been suppressing all of these like Epstein-Barr and H the herpes viruses and the it's a two year chart and the th2 to 817 goes up. So now you have all this inflammation, you tend to be prone to autoimmunity, but you can't fight the intracellular infections in cancer.

So and that's where I learned because when I had Lyme obese you bartonella, I did three and a half years of highest dose I. V. antibiotics like seven at a time.

Three times the dose I never give a patient. It didn't do anything. And any of my natural killer cells on chain was zero. And I remember, as in the ICU and the nurses get a shift change and the ones that are ill and this is that AIDS patient keeps turning up negative for HIV, you know, and that's why I found the power of immune modulation.

And so you're lowering the inflammation, raising that that immune system that can fight these infections. And and really, it goes along with most every chronic illness looks the same.

Like you look at an autistic child, looks like a line patient, looks like a, you know, chronically ill autoimmune patient. And we just started we've been doing a veterans program and these guys are a mess.

They are just sick and they're getting the worst care just pumped with, you know, basically anti-depressants, antipsychotics. And so we're covering all their care and everything so we can get some good test because, you know, normally they won't do it because they're expensive.

But we found that all of them had won. Of course, the stress and all that PTSD, traumatic brain injury, new numerous issues and tons of toxins, tons of toxins.

And and then they every single one had Borrelia. So Lyme disease and most of them had a coinfection. And the big kicker is every single one of them had patterns, antibodies to their receptors in their brain to other parts of the brain.

So basically to the dopamine receptor, serotonin receptor. And you wonder why they're not responding to any depressants and antipsychotics. They're basically all that's blocked.

And so the key is immune modulation, getting rid of that patterns, lowering that inflammation and turning these people around very quickly that have just been in and out of the VA, which is that, you know, they see multiple neurologists, they just hand them out, adds.

And I'll tell you real quick, those are two long. But the first patient we saw basically terrible traumatic brain injury couldn't read terrible PTSD, couldn't sleep, anxious.

He had an idea where he just barely touched his skin. And it is terribly painful in any he came to it. I don't forget Ali and found this but first things that got rid of his India by the fourth visit he oh they they found him face down essentially heart failure pulseless kidney failure liver failure and they put him in induced coma said he's not going to make it.

Peptides in cancer and immune modulation

Well he made it is special forces you know tough guys and but he was still mass went to some neurologist finally came to us and we found immune systems were terrible bad you know the Lyme and and he had bartonella and we're trying to figure out how could they all have Lyme and turned out all the special forces go through Fort Bragg in North Carolina and they're in there and the brush for four weeks at a time.

And we think that's where they're getting it. But, you know, no proof on that. But and by modulating their immune system, all that stuff gets better. So he can read.

He went like on like a couple of months later, he went camping. And when they go camping, they bring a sleeping bag. But the I'm not a vet, but just treating these guys, you think that like Special Forces is going to be they're the kindest, most appreciative, polite people.

And it's just been a joy treating these guys and the care they get. It's just, you know, with the cancer care, it's just you got this air here. Here's your protocol that oh, we were doing that 20 years ago, too, you know.

And it didn't work then. Yeah, but they we did say that, but it's a standard of care, right. So and, and it doesn't really matter, you know, whether it's Lyme disease or whether it's autoimmune or whether it's cancer.

I mean, it all relates to immune system dysregulation. So, you know, for an individual battling cancer, I mean, it's the same type of scenario. You need to take a look and see, you know, how am I able to modulate?

So what what are you were talking about the thymus. And obviously there are a couple of very you have I wouldn't say famous, but the two that you use the most, you are like times that alpha one, thymosin beta four.

Then if you have a shorter version of Thymosin Beta 500 you. So what, what did they do and how well what do you see their usage and you know what what are the benefits.

Okay let me just mention just so that everyone listening kind of understand how it all goes together, where, you know, when you have this, you know, low t, h one, high t, h two, you get all this information.

That's when all these, you know, kind of diseases of aging start happening and they get reactivating infections and all these things like that. So if, if you can basically bring up that th1 and bring down that th2, then then you're doing a good thing.

And yeah, so and the, it's funny, there's a trial that came out, got all these headlines because it's really big in anti-aging now. So they hit trial where they gave people growth hormone metformin and DHEA, and they showed that the thymus improved a little bit.

Very small study. But I'm like, you know why you're going to that length to when you can just we can give you totally safe and effective like dynamic replacement therapy.

And there's like famous in Alpha One has been around for decades and approved in 44 countries for cancer for fighting infections. So it really erases that that th1 and that's been the most popular because it's a commercial med.

But they made a mistake and came out with a study that showed it was safe and effective for COVID early on in the COVID pandemic. And so now being that the case, the FDA could could not then bring out their vaccine for emergency use and bypass and all of those things.

So they banned it. So and so we said, okay, what are we going to do? And we did metabolomics, transcriptomics and looked for a replacement and we found a combination of time again and violence and damages.

Only two amino acids. So very bioavailable it's 100 times more potent than 9 million, which is no doctor use a lot as an injectable and especially when combined with Bylon.

But I can't call it violent because that's a trade name, but we call it immune peptide too. But we combined that it and they do so many other things and lowering inflammation and that human transcon growth factor beta, which is a big stimulus of disease and cancer and raise that to one much more potent than actually Thymosin Alpha one all the time is that everyone's been around forever and they got, you know, huge studies on it.

And these are you know, there's there's a lot of studies. That's when I first started lecturing on peptides and I just list all these studies. Doctors are like, Wait a minute, I keep up with the literature. What?

How could you have so many studies? Why haven't I heard of this? And because there's no drug rep bringing the studies to the doctor. But yeah, so that's a big, big one.

We like a lot of also other they're all very antimicrobial. And then the other one is other is TB. And so TB for thymus, a beta for it's the most abundant thymic peptide and you can think of it as more of a modulator.

So it will increase th1 lower th2 as more adjuvant effects. And one interesting study, they looked at COVID patients on autopsy, which they didn't like to do autopsies and patients, but there was no thymus and beta four in the lungs of people who were intubated and and they ended up dying.

But the problem is it's a multi domain amino acids for a peptide. It's 43 amino acids and it has kind of diff different parts to different thing. So it's it's not orally active because it just gets broken down.

But there's one domain that stimulates mast cells which can be helpful and healing in that. But for our patients, it's not a good thing. And then the first four amino acids is the work force that is for the immune modulation.

So we took that part and there's a lot of studies showing, you know, basically repairing cardiac function and nerves. You know, it works on the tight junctions in the gut.

So it does all those the the villain in the sandwich had tons of studies on on cancer showing like in a year a fourfold decrease in cancer. The Tb4 act of frag not they didn't concentrate on the on the cancer studies they're more of the rejuvenate part but and then we found a natural isomer that is dramatically more potent and totally resistant to enzymatic degradation.

So that is another one that you can really use together and isolate with peptides is they're very synergistic and they all get all the same. Emerson's kind of work similarly, but have a little, a little different effect.

So, you know, other ones that will do that again by neurons. But yeah, those are the key ones. There's, there's a, the thymus secretes a bunch of them like different sizes and that but yeah, definitely the main ones commercial was name Avalon but America they said nope.

And so we actually came out with a very we love the product the feedback's that great and and then so you can add it now is lower because it people like with the with the that's antibodies to the brain and what the studies show is a pretty of a bunch of heavy metals and toxins you still don't tend to get autoimmunity, but you add an infection to that.

And there was a study in the cobalt mines in Africa and they were just loaded with heavy metals and cobalt, but they really didn't have a higher incidence of our immunity than the general population.

But the ones that got malaria, even if it, you know, was treated and the resolved, they all had antibodies to their brain. So and that's how we found with these that that that's what they all have.

So I think so many people have that and don't know, you know, all this kind of mental illness and A. D. D. and bipolar and depression, anxiety, but and then another one.

Thymosin Alpha-1, Thymosin Beta-4, and KPV

So so BPC is kind of the go to it's it basically heals and lowers inflammation and protects all the organs from like your liver, from avenging angel, mushroom toxin and alcohol medications protect from overdoses they gave it to a rats that had they gave them both M. S and inflammatory bowel disease they gave it orally reversed both of them cut the rat sciatic nerve if they bathed in BPC it reconnected.

If they didn't, it didn't work for kidneys, works for brain depression, you know. So there's so many things that's where we tell people to kind of start.

And the nice thing is you can't go wrong. Like they can't even find a toxic dose on these things, giving a thousand times the dose that people would normally use and they're actually potent down to pica gram levels.

So normally there's milligrams that most supplements are and then there's nanograms 1000 for less and than five kilograms. So that was less than that.

So tiny, tiny doses and as you mentioned, kind of how they're different than the hormones. The hormones go into the cell, into the nucleus, change proteins, synthesis, kind of slow on, slow off.

Peptides tend to with some exceptions, work on the cell surface have pleiotropic multiple effects with secondary messengers. And people say, well, you know, that kind of concerns me.

Well, your meds are kind of do one thing, but when Amanda is one thing, you tend to have more problems. Actually, it's kind of counterintuitive, like supplements do a lot of things because let's say the body one thing gets messed up, there's like ten other things.

So if they if a meds is one thing, you've got all this problem here and it kind of ends up backfiring. But the peptides do work like the supplements and tend to fix all the things that are associated in that arena.

So yeah, they're the most things I don't know any, you know, major side effects and even minor side effect. You know, some people say, oh, BBC gives me energy, but yeah, I can't take it at night or Anjali.

Some weird thing, but in general, exceedingly say. Another one is CP is a the last three amino acids of melanocytes stimulating hormone and well as I said many hormone that some of the Lyme docs are really basically forward thinking.

We're using Mylanta ten for inflammation. So Blanton was out there's one and two that it increased weight loss energy and libido so excited sign me up.

But when you get tan it stimulates melanocytes, which is great when you're young, but I rise early, try it and I'm pretty 80 days I work. It is not working.

And all of a sudden I was like someone painted me with a black highlighter. It just looked so weird. But so the K-Beauty does not do that. And it's very interesting in that it's one of the most potent inhibitors of mast cells.

So, you know, it's cause a lot of so it's very anti-inflammatory, but it stimulates your immune system, which is kind of, you know, an oxymoron. And it's very anti-microbial.

For instance, it's more potent against fungi and mold than the flu can at 1/1000. The dose also pathogenic staph aureus. So so you really want to raise that one lower that that T to and that's how you urinate and get back to that younger immuno phenotype so you can gauge someone's age based on their immune system ratio.

If you look at the CD4, CD8 in kind of with HIV patients, they monitor their CD4, but the ratio is shown to be even more sensitive. But as you get older, especially if you're under one with that ratio, is you have a lot of senescent cells.

And so we'll talk about that. You want to be above like three, 3.5 on that. And you'll see as you get older, just, you know, and that's why people get shingles.

And whether you give a vaccine like just boost that that immune system. And the immune system is shown to be an independent, basically marker for longevity and quality of life and so many things.

So and is there any kind of ten year time like BPC, you know, then people are thinking, well, it's it's regenerative restorative and you know, with cancer or then you have cells that are growing fast.

So do you want to bring in something that is kind of building things? And as so, is there a danger with any of these peptides in regards to, you know, while you're dealing with cancer or in conjunction with like chemotherapy or post chemotherapy or post any kind of therapies. Yeah.

And answer as you generally know and there are also some that increase angiogenesis and so they oh you know, but it, they only do it in a normal sense for regeneration.

And you know, the cancers are very unique. And there was a study that showed there was increased thymosin beta four around cancers and says oh it's causing cancer but it's going there to fight the cancer and try to modulate the means.

And it's kind of like, Hey, Ali, see these guys in yellow jackets that are red trucks, you know, with a Dalmatian in it at every fire? I think they're causing it, you know, and there's a lot of studies prove that wasn't true.

It was, you know, basically an association, not a cause and argue I hear that a lot about with stem cells and oh, they're making it grow and and stem cells are great for cancer and they're a great immune modulator.

Immunosenescence, senescent cells, and longevity

And you look at all the treatments that it all but a large majority of them are immune modulators, ozone, vitamin D, you know, so, you know, zinc, all these things that help bring that back tend to be what's great for our chronically ill patients, as well as cancer patients.

And you know, the word immuno senescence and I mean, that is kind of a aging immune system in a way. So how how can we reactivate that? Because obviously we want a young and healthy immune system.

And you mentioned kind of the ratio between CD4, CD8, which are components of the immune system, plays a huge role in seeing how our immune system of vital that is.

So what can we do to kind of correct that and shift that through more in a positive way? Yeah, and it's a big focus of the research and even longevity realm to get rid of these senescent cells.

So as you get older from you know, inflammation, stress, poor lifestyle pollutants, toxins, pesticides, you know, excess glucose, lack of exercise, lack of sleep, loss of nutrient deficiencies, you you basically have a problem.

So the the now kind of a result and thymus evolution and then this that immune shift. And so what basically happens is the cells with all that stress, they get to the end of their lifestyle cycle.

They get short telomeres, which are little caps on the on the chromosome. And each time it replicates goes down like the hayflick limit that it can't replicate anymore.

It's got damage. And what happens is the mitochondria sends this and they instead of they transform into a energy

making organelle to a basically oxidant producing organelles.

So they start pumping out all these reactive oxygen species and inflammation and then they get this resistance to being normal autophagy, where your body's always renewing these cells that are not working too well and but they're resistant especially is because you need a robust one genetically cell functions to gobble those up and reuse all the components of your keeps ones too low.

That's going to add to it. So you have these cells now that are not only not doing what they're supposed to, but they're causing all this inflammation.

And actually those will actually recruit more senescent cells. And then you're become, you know, more and more and more. And that's when people start getting very sick.

And especially there are studies on type 2 diabetes and congestive heart failure and they're essentially non reversible. Currently is is the thought. And so there's an there's because senility there's a number of ways to selectively knock those out which they should have been one is you got to have get that one up so something's going to gobble it up.

But for instance there's what's called FOXO4-DRI It's a reverse molecule that has to do with autophagy that will result in selectively knocking out those cells.

It won't harm any other cells. There's another method that's approved for basically transplants, and it's called The Immunosuppressive, but it's not. It's an immune modulator and SEB then the like, Fisetin, curcumin, all the curcuminoids, flavonoids and things tend to there's kind of two pathways that they block separately.

And so the thought is now is is doing it once a month. I could do it like three days a month, knock those out. Then you give other peptides to protect the mitochondria the DNA and and then, but then get rid of the senescent cells and people can really turn around very quickly and some of these like heart failure studies where the heart is just full of senescent cells that are just not working and they're pumping out all this inflammation and also, you know, chronic kidney disease, diabetes, and they can reverse very quickly.

So, yeah, there's a ways to, one, get rid of, you know, get rid of those cells. And then also there's what it called sassed inhibitor. So they know secreting all this inflammatory cytokines, there's other peptides and meds, grabmycin that will reduce the amount of it's not fixing it but it's reducing the damage that that that they're doing so so those are part of it and a lot of research going into that currently.

Yeah. Well Dr. Holtorf I know we can kind of chat forever and you. Know, how many times have we tried to get together? No, I know, but. Thanks for your patience. Yeah.

Closing remarks and access to peptide products

All Thank, thank you so much. And, and these peptides, you know, we're talking about, you know, TB Frag, we're talking about, you know, Thymosin Alpha One or we're talking about KPV I mean, they are available at your company.

I use them and my practice and I love the effect of them and the beauty of it. It makes it readily available for people. So I appreciate you going through that, you know, taking that step because it's frustrating when you have great science, great tools, and then you're not able to access them.

So thank you for for taking those steps and making it very clear. And and we're going to have like those 20 new products that are unique. New thing is going to bio regulators, very tissue specific and we'll do a lot more combinations and liposomal delivery, real liposomes, most liposomal they take some less it and shake it.

A lot of energy is a liposome. We also are going to be launching a year long peptide and stuff that works training and so like a monthly lectures. And I'm going to come also to our nonprofit and if you know the positions that are,

you know, have a patient who has every sign of a low thyroid, but their TSH is normal or same for a patient like no one can fix me and I'm so tired and there is a general doctor that's on your head, but a lot of resources there.

And just one image, that's our nonprofit now we have more nonprofits in profit so and so anyways didn't work out as I thought. Oh, thank you so much, Dr. Holtorf I really appreciate this.

Very nice to take the time. Thanks. Bye bye.