Introduction to Peptides and Cellular Communication

We need cellular communication to be able to function. We have to have the right environment. We need the resources. We need the orchestration of those resources.

And really what peptides do and help with is creating that orchestration, increasing the communication. So it's a little gentler. It's not overriding the system and down-regulating your pituitary and your end organ testes and everything.

I explain it like reading glasses. I mean, I don't need glasses, but someday I'm probably going to need reading glasses. But when I put reading glasses on, it helps me to focus on the letters that I'm trying to read, but it doesn't weaken my eyes on the back end.

That's what peptides do. They help focus and enhance, but not weaken. Welcome to Doctor Talks, the podcast where every episode leads to a healthier you.

Join us as we navigate the world of optimal health, uncovering groundbreaking strategies to conquer chronic disease. In each episode, we'll bring you the latest insights from leading health experts, medical innovators, and wellness warriors.

If you're seeking to transform your health journey, or if you're looking for answers to burning questions, you've come to the right place. Get ready to unlock the secrets of lifelong health and vitality.

This is Doctor Talks, real talk from real doctors on the issues that matter to you most. Hi, I'm Dr. Edward Park, the host of the Recharged Biomolecule podcast, and we're very lucky to be joined by the peptide researcher, aka Dr.

Adam Bender. Adam, thank you for joining us. Yeah, thank you for having me. So as fate would have it, Adam and I met giving lectures in Cancun to a group of people interested in stem cell research.

And he was up there trying to fit two hours of slides into 45 minutes. And he did a pretty good job. Brought out the gong show hook. That's right. But a lot of information, just incredibly charismatic, fun, and great to listen to.

He made a joke. I'm not sure it landed in Spanish that he was actually 65, but he's coming up on a birthday in a few days. How are you holding going to be Adam?

I actually am, yeah. No, it's not 65, it's 62. So, no. No, you're lying. You're lying. No, I'm not. I do jokingly say that, though, whenever I'm speaking on stage, because, you know, we talk about regenerative medicine constantly, and, you know, I'm like, this is what it'll do, you know?

It'll turn, no, I'm going to be 44, so. Yeah, you look great. I mean, you look like an action figure, you know, kind of like Joe Rogan, but with- Yes, fat.

So you look pretty primed and ready to go. How long have you been on the peptide train for, personally? Yeah, I know personally, honestly, I've been, it's been probably 15 plus years.

Doctor Talks Interview Setup and Guest Introduction

Um, you know, I would say, you know, dabbling and understanding and researching and figuring out, you know, not just for myself, but for others really, you know, not just about, you know, what peptides I would like to take for myself to get the results that I'm looking for, but, um, peptides that are safe and efficacious and, and all of that in between.

But let me tell you why I was interested in having on the podcast. You know, I have been taking something for 17 years that I feel helps me and not anything else, but through the years, you know, patients are really partnering with people like you and driving a lot of stuff forward.

And although there is some bias for patients to want to believe they're spending their money well, I do hear a lot of good things about people taking a lot of the somatogogs, which we'll go into in the BPC and others.

So I do think it must work because patients generally don't have a lot of reason to exaggerate or lie. But I know that the medical establishment is kind of lagging here.

I know the one big one you see when you go to the aging conferences is human growth hormone. And you can just spot people a mile away like these dudes in their 60s.

Yeah, they look like Minecraft heads. They've got like square heads. Oh, yeah. And they've got low grade acromegaly and big muscle shoulders. And then you have a 28 year old Russian girlfriend.

I mean, it's like a syndrome. Yeah, it works. But you know, there might be a trade off in the literature about cancer, but obviously your libido goes up, your body mass goes up, you feel great.

So it's obviously a bargain that people are willing to take. I mean, but look at Arnold Schwarzenegger in the old days when he was juicing so hard. I mean, his face, everything changed.

So we know that in the bodybuilding community, people have always messed with testosterone. They've messed with HGH. But what you're talking about is something a little more gentle and a little more physiologic So a lot of your big sellers in the peptide space are these somatogogs or they kind of are growth hormone releasing hormones or releasing factors Tell us the difference between that and just getting your gym bro to inject you in the butt with HCH You know my one of my partners and I we always talk about you know It's like bro science, you know, because there's so much bro science out there which is a lot of you know, the guys at the gym and, you know, they're reading online and they're, they're finding resources for, you know, what I would call their, their, their exogenous growth hormone, uh, or, and you have exogenous testosterone and, you know, people talk about bioidentical this and that, but there is truly a difference in like an exogenous a growth hormone, which is basically taking a synthetic derivative of the growth hormone that your body creates and it's injecting it.

And the best way to describe that, it's almost like a waterfall or a flushing or a push of growth hormone to the system. And you have to continue to do that.

And again, it works, it pushes, but it's in a sense pushing the pituitary gland to really, in a sense, overproduce your body's natural growth hormone.

And it's also just putting it into the bloodstream. So I guess I would say it's less of the pituitary gland producing, but more of just throwing it into the bloodstream, letting the body utilize it, and then you need to do it again.

So that's more of that exogenous and yes, it's high doses. You know, you can go back and forth on the research and some say that it can have some adverse reactions down the road.

I think with anything, it's the abuse of utilizing products like that, which we both understand people We live in a society where everybody just wants more.

So like more is always supposed to be better when naturally and ultimately I don't think that's always the case. I think you know over the decades HGH has really solidified itself as a sort of anti-aging drug when used wisely.

I think it's one of, I know I had this misconception before I prepared for the talk here that you know you could get E. coli to make it. Yeah if you transfect a gene you can get like E.

coli to mass produce it but the peptides that you're offering and that most people are in the marketplace are offering

actually synthetically or you know not synthetic like they're fake chemicals but they use amino acids to build them one by one right yeah so we'll get into that a little bit but just for people that don't know anything let's just get how just get a little bit terms out of the way so an amino acid is are Before we get there, Doc, real quick, I want to get into this because I talked about that growth hormone, the exogenous being kind of, in a sense, pushing the body into a growth hormone state of just pushing that into the system.

Exogenous HGH vs Therapeutic Secretagogues

Whereas what these therapeutic peptides are doing, the secretagogues, the growth hormone secretagogues, which is actually two different categories, there's growth hormone secreting peptide peptides, and then there's growth hormone secreting hormone peptides.

And working whether on the pituitary, the hypothalamus, The reaction though, and those are things like Tessa Moreland, Sir Moreland, there's MK677, there's IVA Moreland, CJC.

So again, what's interesting is they're all within that category, but they all hit different receptors. And their natural response when they're put into your system is to optimize how the pituitary is releasing the growth hormone.

That's really what I was driving at. It's not like a big surge of testosterone or growth. It more works with your system. If we turn back to the gym bros over the years, some of them get liver damage, some of them get neuropathy.

One of my patients was injecting and he thought the seed oils gave him neuropathy down the line. if they're mixed with so there's a lot of bro science like they say the Cyprian aid versus the other appropriate in a one causes more gynecomastia and then they have to take the blockers of the estrogen so yeah they're they're kind of out there but now the doctors are are involved too and and i know that the patients who come back to me they're always like hey doc what do you think of epimoral and what this or that and i'm like i don't have any experience But it seems to be, all in all, very positive.

But let me just explain to people what a peptide is, because it's not all that clear. So basically, our genes make proteins and smaller amino acid chains called peptides, somewhere between 50 to 100 or less, considered a peptide, whereas giant things that can be hundreds and thousands of amino acids long.

And amino acids are just the letters that spell out these building blocks that make the peptides and proteins. Those are stringed together. So when you talk about a protein that's like a big thing like hemoglobin or something like that They have structure because of the way that they predictably fold on each other But peptides usually don't have that much of these pleats or helices They don't have that structure that makes them a functional mini machine, right?

So what you're talking about is something that's easily synthesized and let's talk about that for a little bit. So From what I was reading you probably use the solid type of So for those, just so they can visualize, they take the tail amino acid and it grows in a certain direction and I guess they just add one on making sure nothing extra gets added and they flush and they add on the next.

So if you're like spelling like monkeys typing Shakespeare one letter at a time, If you do it well, you won't get a pure thing because there's errors, but you can sort it out later in the filtering and get your pure exact number of like 33 amino acids and then have it 99% pure.

Is that roughly the thing? Yeah. Yeah. And one of the ways that I described is like, you know, you've got like your workbench. And then on that workbench, it's almost like a sticky glue of tape or resin that just goes straight across.

And I'm going to take this amino acid, I'm going to start lighting these amino acids up in a row. And then when I get to that end of the line, I'm going to cap that off.

And then I do the next one and I cap it off. And then it goes through a purification process in a sense, kind of

washes out that resin. And yes, as it goes through.

Just typing one letter at a time what the next amino acid is going to be. It's not going to be 100% perfect, but it's going to be pretty good if you know what you're doing.

Look, and then how you get the purity level is exactly like you said. There's a filtration process. So when we have peptides that are between 2 and 50 amino acids in length, we know that you've got smaller, larger.

So when you filter, are we going to filter for the smaller? Are we going to filter for larger? So we can then filter based on You can use chromatography, size exclusion, and you can use like charge.

Yeah. Okay. So that's just basic science, not complicated. So they're really the safety aspect in terms of getting like impure chemicals in there and excipients is very minimal.

And then at the end phase, once you've got your 33 letters in a row, you just cut off the resin part and then they're free and you purify them and freeze dry them.

Okay, that sounds good. So that's what everyone pretty much in the business does. Yeah. So the lyophilization, it just means freeze-dried. Like if you ever bought sea monkeys in a comic book, that's what that was.

So there are also exosome makers that lyophilize. So for those that don't know, that's just three steps. Put water in there and they freeze it so that there's crystals, right?

And then they put a vacuum over it, and then it sublimates. I mean, it doesn't get wet, it just kind of goes from ice to gas. And that gets rid of 97% of the water.

And then the secondary, they just put it over low heat and it kind of just, the water goes away. And then you get your powder with your residual amino or peptide, right?

So let's talk about that. Even the people who sell the exosomes, if they don't have an exosome product, and I talked to this with Scott Martin who works for a different exosome company, even they said, hey, it's like 80% viable if you freeze dry exosomes.

So you do have to use like a sugar. I don't know if you use Trehalose or something like that, but that's part of it. But it's pretty inert. So when people reconstitute it, and we'll go into this safety wise, obviously not everyone's so good with sterile technique.

They have to buy sterile needles and syringes to reconstitute. But they're just going to put a little bacteriostatic water in there and just gently reconstitute and keep in the refrigerator.

That's all well and good. But from my point of view, as a doctor who injects things IV a lot, I think that there's a point of failure there. And I know you guys addressed that on the website.

Answer me this question. Why bacteriostatic water and not saline or sterile normal saline? Well, and I wanted to address that because we typically recommend, so you're talking about, I mean, if we're talking about like a subq injection or an IM injection, if you're using something for multi-use, bacteriostatic water is going to be the essential because we know, again, you talk about sterile technique, wiping the alcohol on the top, you're injecting the needle, you're drawing it out.

Well, if you're only drawing a small portion, because that's the other thing that I think needs to be clarified is, You know, peptides and their precision, you're utilizing the majority of the time micrograms of peptides.

It's not like a milligram. Some you are like a MOTC or some of these GLP ones, but it's typically micrograms. So if you have a. say a three milligram, you know, vial of a product and you're using micrograms, that's multi-use.

So we utilize bacteriostatic water just for the purity, making sure that if you're injecting in, you're coming out, it's safer. If you're doing something where you're using a whole vial at once, or I would say utilizing sterile water would be something that could be actually pretty efficacious and less stinging to a patient.

I only reconstitute with normal saline without preservatives, but I used to use Botox and back in the day, because it's so expensive, we did use bacteriostatic water, but just for the lay person so they can understand, there's bacteria everywhere.

So anytime you introduce air into the vial, then the dilutant gets a little contaminated with air, bacteria, and then you take that sterile product and inject it into your freeze-dried powder, then the clock is ticking.

I know that your website recommended don't leave it in the fridge more than a month. I think that's okay, especially because you have the Bacteriostatic alcohol in there.

But I guess if I was to inject that IV, I'd be a little worried just because it's a little faster release. So most of your consumers They're just out there ejecting their sub-Q skin, right, after reconstuiting?

Yeah, a lot of them are. We work with a lot of clinicians. We work with a lot of just individual customers, and it is. It's just going into sub-Q, like around the belly, around the umbilicus, about two inches out, different sub-Q sites.

I mean, you can do also IM. We have NAD, which is not necessarily peptide. It's a coenzyme, but some people do IM with that.

What Peptides Are and How Theyu2019re Synthesized

In terms of like, if you have recent muscle or tendon injury and you're doing BPC, something I am might be okay. It may be okay. You know, there's no actual clinical evidence that actually shows like injecting BPC or TB 500 directly at a site of injury is going to be more efficacious than injecting it just sub Q around the abdomen.

Now, is there a, you know, kind of a psychosomatic, like pseudo, you know, healing response where we think, Oh, I'm here at the site. It's going to be better for me.

We know that the power of the mind is massive. Oh, for sure. Yeah, but like just so to break it down to people what parenteral means. So parenteral means that you're injecting into the body.

You're not absorbing orally because a lot of people obviously know that you have protein dissolving structures massively released from the pancreas. So you can't really swallow a lot of these things.

Nasal like for the love drugs and love hormones may be really great for access to the brain. Yeah. The sub Q is a systemic injection. So you don't risk getting all that stuff digested by the pancreas and the stomach, right?

Yeah. There are some, you know, again, it also depends on the, you know, the encapsulation. There's a certain peptides can be utilized more so, you know, in taking ingested orally, you know, we know that the efficacy typically goes down.

Yeah. But like sometimes BPC is good. It's a body protective compound actually comes from gastric juices. If you have an enteric with a capsule that's able to get, you know, further down into that system, it can have some benefit.

Dihexa is actually a, it's a neuropeptide, um, that actually is very well utilized in oral form. It still crosses the blood brain barrier and that helps with neuronal connections.

It's been researched extensively in Alzheimer's and dementia. Before we go on, you know, I know a lot of people over the years tell me they love these peptides, they're ordering them, but I do have that concern.

You know, and Scott Martin, who is the kind of stem cell expert guy that we met, he gave a lecture the other day on

his Facebook group, and I know you have a private Facebook group too for docs.

It's called The Next Level, and people who are interested in sharing knowledge offline or in a private setting can join with you there. But he shared with his group that he thought it was like, you know, reheating chicken over and over again when you do multi-use.

So he was very disparaging of the multi-use, which I personally am as well. Even though I've done it with Botox, with Dactereostatic, I guess I just don't really trust it to that people are not going to do something kind of gross.

And even though the level is low from sub-acute injection, it's still there. Are we talking that these files have so much product that you can't really use them all at once?

You know, not necessarily. I mean, most of them, again, are multi-use. I think that, I mean, some of them you can't. I would say then the safety of it.

I mean, peptides are very safe, quite honestly. It's just you don't want necessarily always a rush of a specific peptide. I mean, the growth hormones or gritagogs are one of them.

I mean, if you have Like test some Moreland or against some Moreland, IPA Moreland, CJC. Like if you do too much and typically we recommend like 500 micrograms, five days on, two days off.

You know, if you go up to one or to two, I always say start, start low, go slow. You can build up. But people can have, in a sense, like a niacin flushing reaction.

And it may last for 15, 20 minutes. It's going to go away, the half-life of that. I mean, that peptide, I think, is between two and four hours, most of them.

So some are longer. But again, most of them aren't coming in low doses to do single injections, whether in a So, but your best practice is bacteriostatic water, not just regular water with sterile water and definitely not saline.

So the saline, even though it's pH balanced to seven-ish, and yours is a little acidic from the alcohol, you feel like that's the best practice that's evolved over the years.

Yeah, just just for for safety. Because again, like you said, you never know what people are going to do if they're not using the proper aesthetic techniques.

It just it lowers the risk of something happening. So let's dumb it down. So the freeze dried is good at room temperature for probably months to years, but once you reconstitute it, maybe a month or two at max.

And every time you introduce new air, you're introducing more risk of infection. But the freezer generally is not, unless you have a minus 80 freezer like I use for exosomes, the freezer is not usually a good place to go because you're freezing and thawing, right?

That compromises the product. Yeah, because the bonds that are holding those amino acids together too, they're quite fragile. So when you freeze, it's going to expand any fluid that's in there.

So it can actually break those bonds, denature the peptides. And that actually goes into the point of even in reconstitution, for those, I know you explained it, but reconstitution is basically taking your backwater, putting it into lyophilized, so then it becomes a liquid form.

I've had people be like, how do I take this powder? And I'm like, you don't take the powder. You don't take the lyophilized product. That's not good. You got to reconstitute.

And you don't do this, right? Yes. When you don't shake it, you slowly twist it or just tilt it back and forth to make sure that it fully dissolves. Yeah.

Gotcha. So most people can get over their fears of that and do that relatively safely, I think. So basically, you'll be shipping something to somebody in a freeze-dried form, and it's good for, what, years on the shelf?

I mean, 18 to 24 months, honestly. Yeah. Okay. As long as it's kept in a cool, dry place, you know, don't sit it out in the sun. Yeah. So let's talk about what happened.

I think it was two years ago, the FDA got real excited about cracking down on peptides in this country. So a lot of people kind of got letters. And so even though it was a very much a consumer driven health kind of biohacking thing, how did that reshape the industry in terms of people's visibility and their ability to sell product?

I mean, I think it had a massive impact on a lot of the clinicians, physicians that were utilizing, you know, these very safe products to help their patients and their clients.

I think that at the same time, even in the industry of, you know, we talk about stem cells and exosomes, I mean, the same thing was happening around that same time.

And I think that it did get rid of a lot of the industries, people that were just, I don't want to call them like working out of their garages, No, literally like fly by tonight KitchenAid strip mall.

Yeah, absolutely. And so, you know, there's a crackdown. I mean, the FDA's regulation is to make sure that products that are being utilized are safe for people.

And so, you know, there's good, it did shift the industry a lot. You know, I would say that the hardest understanding of it is, you know, if they're saying that something isn't safe or there's not enough research.

And I find that across the board, whether it's peptides, stem cells, exosomes, vitamin C, like where we hear all the time, well, there's not enough research.

There's not enough research. I tell people, you know, nobody has to listen to what I say. Just go research because there is a tremendous amount of research about the safety and the efficacy of a lot of these products.

We age because our telomeres shorten and our stem cells deplete. But what if we could support both? I've been taking TA65 for 17 years. It's the only supplement I trust to support better mood, better sleep and exercise recovery.

At age 57, I don't have any gray hair and I don't need reading glasses. TA65 is available now. Go to rechargebiomedical.com slash TA-65 and enter promo code RECHARGE10 to save 10% off.

That's right. And so, you know, obviously you got to follow the money. But so FDA is cracking down on a lot of these things. I mean, you know, Bill Faloon, 27 years ago, went to prison for a few months because he was saying, don't take our vitamins.

So they've always had a crack at it.

Reconstitution, Storage, and Injection Safety

So they, around the same time that they attacked peptides, they actually shut down compounding pharmacies and made them do this rigmarole where they reclassified their designation.

So it's really a way, like you said, of fitting out the herd and making sure only the strong survive. But yeah, I do think it's shocking. You know, I used to know a manufacturer, he sold his factory for only like $40 million to China, to some Chinese company.

And the Chinese company's business was to take Chinese supplements, take them to his factory, put new labels on and sell them back to China. Because people didn't trust the products.

That was their business. They wanted something to say US on it is what they wanted. Yeah. Because, you know, I used to make a supplement line myself and I didn't trust, you know, my even my manufacturer.

So you get third party always testing for safety for heavy metals for bacteria. And after the products encapsulate, you got to send it to a third party to make sure it's got the purity and the safety and.

You mentioned no LPS. What's LPS? How can that argue? I look at all the saccharides, which can be utilized within the resins and for bonding and stuff.

So again, through the purification process, the rinsing out, you want to make sure that you're removing that because I truly believe that when people have an adverse reaction to a peptide, it's typically not the peptide.

It's the additives or the impurities that haven't been washed out of that product that's creating that issue. By nature, peptides are extremely safe. So that can happen anywhere along the manufacturing process.

And once a person at home reconstitutes it, if they leave it in there and use it after three months, having like some bacteria, introduced, then you might get like a LPS type of reaction, endotoxin.

You could have an endotoxin reaction right off the very first injection if it's not actually coming from a pure, clean source. But you know, it's really important that people don't know what they don't know.

Even that bacteriostatic saline, once you put air in there, it's no longer sterile. So that needs to go in the fridge too. You can't just leave it on the workbench for a month and use it again, right?

Anyway, there's risk everywhere, but it sounds like people are getting a net benefit. So at this point, the last stupid question is, is it illegal to use these?

No, it's not illegal to use them. I know that's so much in the space. I do go back and forth a lot. I mean, I've been in the Regen space for a long time, and it's the same concept and theory that we've heard in stem cells, like what's illegal to use stem cells.

It's not illegal to use stem cells. A lot of it is how you market what you say towards these products, false claims, but it's not illegal to use them.

You can actually utilize them, and they are available. Actually, in the FDA's statements and what they have, there's nothing that actually says that they're illegal to even be made.

Okay, great. Now, some of the people claim that this origin goes back to Russian scientists at the Institute of Bioorganic Chemistry. I don't know, it's BPC.

I guess it is naturally made, but are there any synthetic, non-naturally occurring ones that aren't the greatest hits? I mean, every peptide is actually naturally occurring.

There's over 7,000 different peptides that have been identified and utilized and produced. And they, again, they are producing a synthetic form of a natural peptide.

So they can take the exact same amino acid sequence like BPC157 comes from gastric juices. So they can find out the amino acid sequence of what BPC157 is, and they can synthetically make the exact match like it ran.

I know you guys sell a lot of this ozempic tech stuff. And so for people that don't know, the last eight years, ozempic has gone nuts. Like all these stars are losing weight.

And so let's break it down to, it's a glucagon-like peptide, right? That's secreted in the intestine and it raises insulin and lowers appetite and gut motility.

And people lose a lot of weight and they can get a lot of diabetes. So that could be net good. So you've got on your website GLP-1-2 itself, I guess, and then you've got something like semaglutide or ozempic, and I didn't see terzepotide.

So we have, well, that's a big regulatory thing right now. Anybody that mentions the terms ozempic, mangiaro, semaglutide, terzepotide, there's some very large pharmaceutical companies that are coming after it.

Yeah, I wouldn't think so. It's a lot of money out there. Yeah, there's lots that's happening. So if you're selling a glucagon like peptide one, and then like one, which mimics one that starts with an S, and then you have a glucagon like peptide two, which has a T, which mimics one that starts with a T, if you want to go into DNA.

So, and then we have one that's also, if you've heard of Reta-Trutide, Reta-Trutide is actually a triple. It works very, very well, GLP-1, GIP, and then it actually works specifically on a glucometabolism, so it actually helps red metabolism within the system.

So in terms of the amino acid sequences, it's similar or the same as GLP-1? They're similar, right? They're not? They're similar. Okay, so it's like a semi-competitive agonist there.

Right. What people don't realize is, I mean, semiglutide is a peptide, trisapatide is a peptide, retitrutide is a peptide. They've just added a covalent bond, an extra piece, because your body's natural peptide, that GLP-1, The half-life is maybe an hour to two, but if we notice people that are taking the GLP-1s, their recommended dosage is like once a week.

Yeah, they've been stabilized chemically. They've stabilized it so it'll actually last longer within the system, five to six days. Okay, so you know, these things are not benign.

They're very powerful. So I know that you have a calculator. Is it foolproof? Like if I want to take so many micro milligrams, I go to the calculator and I know how much water I'm putting in there.

So you have a way for people to safely calculate their dosing. What is that website? Yeah, it's peptiderearcher.com. And so I created that just because, you know, I'd already went to nursing school or medical school.

It's one of the number of doctors that I talked to. They're like, I don't figure out the calculations. My nurse does it for me. Yeah, for sure. Because you start getting into dilution.

If you have three milligrams and then you put in one ml of backwater, then it's a three to one. But if you put two ml of backwater, then it's 1.5 to one.

And so it changes very, very quickly, which can change your dosage. So at the manufacturer, do you make your skews such that no one can put like 5,000 times the recommended dose in at once?

You don't sell them in units that are that big? No, we don't. And so when we create it, it's… We have guidelines, you know, again, if you put one ml of water in or two ml of that water in, and then you're going to have your dosing recommendations, because we typically talk in units.

So, and that calculator is, I would say it's pretty foolproof. It works really, really well. And we haven't had any issues or complaints. It breaks it down for vile, how many, and then…

Yeah, no, I've seen it. It's very user friendly. And believe me, I would be very scared to be doing those calculations. So, So in terms of these individual greatest hits like the growth hormone releasers, there's the love hormones, there's other things.

Why do you do stacks? Explain to me what a combination achieves. Some combination therapy, each peptide really has kind of its own, again, it's like that locking key.

It's its own mechanism of action. And so, or obviously support to what it's doing. And one of the most common ones that we utilize is actually epithalin with something like N-acetyl saline.

Epithalin, it's a DNA reset. It's a reset type peptide. And that one was highly researched. In a sense, formally developed by Dr.

FDA Crackdown, Regulation, and Product Quality

Cavinson out of Russia, in a sense past, and that's, you know, in a sense called, and it's really like a bioregulator, but again, a peptide that works on the pineal gland.

It also hits three specific receptors that helps to it, in a sense, even reset sleep cycles. But yeah, it goes to help with telomeres too, I heard. Yes.

So you mentioned this CENAC, what's it called? Yeah, so N-Acetyl-CELANC. It's a neuropeptide. Yeah, it's a neuropeptide and the N-Acetyl group that's actually added to it helps it have a longer half-life, helps with brain-derived neuro-growth factors, and that one's specific also.

A lot of our executives that we work with utilize it because it helps reduce anxiety. In a sense, stress, it creates a homing effect. Another big hit is PT-141 for your libido, and obviously it is the love hormone.

Do you ever combine those? Yes, absolutely. It creates a connection and increased libido. PT-141 was actually developed and approved for women for libido, which is interesting because most women don't hear about it at all.

They have no idea, but it also works very well for men because it's working those same receptors. It's actually secret. Then things like Cialis or even Viagra because it's not affecting the vascular system and blood pressure.

It works on the neurology No, it could be a mixed blessing. It's like the GLP ones the nitric oxide things can be mixed. Yeah No, I was talking to Dave Asprey for the podcast yesterday.

You say it takes Melanotan? Lots of people like Melanotan if they're pale, but it also juices up their libido or Yeah, I'm on Melanotan too. I take it, I dosed into it and then I rarely take it now because once you kind of build it up in the system, I can take it less often.

It was developed to help with prevention of even skin cancer because it releases that melanin. But I will tell you, I call it like the triple, triple threat and I love it.

Because it's not just about libido. It does help with libido. It helps both men and women within that. It actually does affect the GLP-1 slightly. Grelin affects as well.

So it does have some appetite. And then it gives you a tan. So it's like the best of three different worlds. I mean, you've got So you get tan and rich.

Okay. All right. And yeah, that's great. And there's some modulators of immune function like alpha thymusin. Tell us about that. Yeah. So you've got thymusin alpha one, which we know as we age, the thymus gland, it goes away.

It's one of the things that's actually produced from the thymus gland to help modulate a meat system function. It activates natural killer cells within the body, helps with T cell activation.

And so it reduces inflammation, which is another big one. In fact, it's one of the stronger anti-inflammatory or inflammation modulating peptides that's out there.

And when I say modulating specifically, because I've had people ask, well, what about autoimmune disease? Why would you want to boost your immune system if you have autoimmune?

I go, it's not something that you're giving to the body to boost the immune system. It's to balance the immune system is ultimately what it's doing. So and again, it's it's it's a very powerful peptide and it works works quite well I mean, you know, I I tend not to believe anyone but the patients like it seems to work So that's why I'm super interested and address the myth of that, you know, cuz it's not a myth You know, you see these bodybuilders that take exogenous testosterone and super physiologic like their Testicles are just one two centimeters like they can get testicular atrophy is a common thing So when you take peptides, will that also give you testicular atrophy?

No, they're working on different mechanisms completely. Even the growth hormone isn't working specifically on testosterone release. There are peptides like hispeptin, which can help with regulating hormones, testosterone specifically, but It's not going to have that.

Again, it's a pushing effect. When you take something exogenous like that, it's a forceful reaction to the body. It's pushing it into something which can then have obviously some down regulatory effects where this is not pushing the body into anything.

It's optimizing what you actually need. Our body loses the communication signals over time. We know that from senescence, cellular exhaustion, stem cell exhaustion, all these other things.

You know, I go into the fact that we need cellular communication to be able to function. We have to have the right environment. We need the resources.

We need the orchestration of those resources. And really what peptides do and help with is creating that orchestration, increasing the communication. So again, it's a little gentler.

It's not even riding the system and down-regulating your pituitary and your end organ testes and everything. I explain it like reading glasses. I mean, I don't need glasses, but someday I'm probably going to need reading glasses.

But when I put reading glasses on, it helps me to focus on the letters that I'm trying to read, but it doesn't weaken my eyes on the back end.

GLP-1s, Stacks, and Managing Side Effects

That's what peptides do. They help focus and enhance, but not weaken. Well, it sounds great. Well, it's something that Big Pharma is not going to monetize anytime soon.

It's still going to be in the hands. They have. They have monetized it, though. It's a Blackbuster, right? Yeah. So think about in that industry, it's like, well, we have these other, you know, therapeutic peptides that were on the market, like BPC, CJC, some more like some of these other peptides.

But then they see that there's this larger market. And if the FDA comes in and says, well, we're going to regulate all of these, but we'll leave these other ones.

In a sense, it's kind of a game and a play of where they're at. It's like, okay, we'll get rid of them. In a way, like I kind of don't explain to me, because naturally occurring things, according to the Supreme Court, like genes and things, maybe even exosomes, they're not really patentable, which is good, I think.

Right. You know, so if you slightly modify GLP, one which they have and you get a blockbuster drug which you can monetize like that's gold but are they coming after your other greatest hits like your other love hormones and your other things or they'll always come after every single one of them and what they'll probably end up trying to do is to patent their own and you know a lot of compounding pharmacies now to maintain glp1s and put it is they'll add in like b12 into it so now it's a different It's like a cocktail, right?

It's a rum and coke, not just a rum. Interesting. Well, I think that you're doing interesting work and a lot of it is so incredibly hard because it's very empiric, right?

So people have anecdotal experience, you've kind of followed away, you try and stay away from danger. So as long as people are not like really mishandling and overusing, overdosing, Would you say that the therapeutic index or the range of between efficacy and safety is large?

Like if I made a mistake and accidentally gave myself 10 times, am I likely to have an untoward effect? Yeah, no, honestly, the safety profile of peptides is incredible, honestly.

It's very hard to overdose. Like I said, the most common, if somebody's giving themselves too much, is going to be probably a growth hormone secretagogue.

BPC is one of the safest peptides. I call it the multivitamin of peptides. You don't see, Frank, acromegaly in your patients then? No, no, not at all.

And if you're really looking to get fit and bulked up for the finals, then this is not for you. This is not going to make you. Yeah, this is. So I think maybe we just need to reference the fact that like you talk about anabolics, you know, like anabolic steroids, testosterone can be anabolic, growth hormone, exogenous hormone can be anabolic.

where it is, it's, it's building this massive growth. Now, can you have growth utilizing something like Tessmoreland, Sirmoreland, you know, MK 677? You can, but again, it's in a sense as a, as a, as a positive effect of naturally allowing your body to do what it can, not pushing it into what, what you want.

That's how it's more gentle and physiologic. All right. Well, so people are interested. They can go to your website, the legacy, legacy bioscience.com legacy bioscience.com.

Obviously you work with a WHO registered and, and GMP inspected FDA inspected process. So you have control over the quality. It's not coming from, from Asia or anything like that.

Correct. And then one of our favorite sites that people go to is peptiveresearcher.com. They love it just because they get to read it. And I'm trying to add more and more to that as much as I possibly can.

You know, I only have so much time on my hands, but I still love to dive into the research. I get into, you know, you get in that rabbit hole. I just keep going.

The next thing I know, it's, you know, four o'clock in the morning. I'm like, I need you. No, I think it's amazing for you to travel as much and lecture and share the knowledge.

I'm glad that it's working out. And you know hopefully people can benefit. I think you know when you have N of 1 science right like people wear the little rings and they get their concierge tests and ready to test year over year and I used to do that for people as I talked to to Joe Rafael invented a way to measure like multiple ways of how old your lungs your heart your vision.

At the end of the day, people know if they're feeling better and so that's why I want to talk to you because I'm getting good feedback from people. But again, I think that the science, if it ever comes clinically, is going to be very lagging until we get a blockbuster like these GLP-1 agonists, then it's like everyone jumps on board.

Okay. So the question is, with so many people taking these drugs for weight loss and for diabetes, Monjaro, Ozempic, yeah, a lot of people talk about the Ozempic phase or the wasting, but generally people can have really concerning loss of muscle mass.

Right. And they can also have the GI motility problems. So what, if anything, can your stacks help with in terms of these side effects? I think first and foremost going into utilizing any GLP-1 is understanding that people are pushing so hard because they want the same results that everybody else has, but everybody responds differently to a GLP-1.

When it comes to things like the ozempic face and the muscle wasting, I truly believe that a lot of that has been

because clinicians haven't monitored and have actually pushed too hard with the GLP-1s because we have to understand that it's not about weight loss.

It's actually about fat loss, which is what we're trying to do and regulate insulin. So, you know, when you keep utilizing a GLP-1 and increasing a dose every month, when you may not have to, Your body isn't pulling from stores of energy, you know, from fat first.

We know that it's actually going to pull from the muscle tissue, from the stores of energy that are there. So I would say that one of the things that we do to mitigate is not even just stacking anything.

It's about slowing it down and not even increasing the dosages because What ends up happening is people aren't hungry, they don't eat. If you put a picture of somebody that's anorexic next to somebody that has a noxemic face, they look exactly the same.

It's because they're starving themselves. One of the greatest benefits that you can actually give yourself when doing this is increasing your protein intake.

That's good. If you take a secreticog, is that going to counter some of the muscle loss or not? I mean, there are some like AOD, which actually stands for anti-obesity drug, which is ironic, but it's a fragment of growth hormone that actually helps with muscle preservation.

You could use sermorelin, you could use tesmorelin. And yes, it definitely will, but you still have to realize that if they're starving themselves, you know, they're not getting what they need.

So a greater benefit would honestly be in increasing their protein intake and staying hydrated. I mean, that's electrolytes, putting electrolytes into your water, staying hydrated.

That helps with the GI system. But I truly believe in this just, I mean, I just hosted a GLP-1 summit.

Where to Learn More and Closing Remarks

We had 125 physicians in person and over 200 people watching virtually. And this is exactly what we talked about. The outcome is we all have what we're wanting to get as a result.

I'm on a GLP-1. You wouldn't think that I would need to. I'm 8.5% body fat. I'm lean. I work out. But I'm building muscle on a GLP-1. So the key take home is just be gentle with it.

Cause when you drive down the blood glucose, you, your body thinks it's in catabolism. It thinks light needs to break down, Glucagin, muscle, brain, fat, and it doesn't soak somewhat indiscriminately.

So instead of setting like a 40 pounds by Christmas goal, just go gently you're saying. Cause your protein, your water, maybe add a, a secretogog and that adult you'll be in sort of a gentle catabolism.

Yeah, and that catabolism is gonna be working on the fat, not necessarily the muscles. You wanna maintain that and keep working out. Don't think that it's a magic bullet.

I'm telling you that right now, that it's not a magic bullet. Yes, you'll lose weight, but the goal of getting onto these ultimately for the clinicians that I work with, that I train, is helping the patient or the client to have that transition of mindset that I can eat right and I can start to exercise.

Because some of these people, They can, because they are overweight, it hurts to move. Their joints hurt. They can't go up and down stairs. Yeah. It's a means to an end.

And you know, you're not going to have a rebound like obesity, but the problem is probably that like me, you're having a croissant in the morning, a pizza at night.

So yeah. Well, we choose our own poison. Yeah. Well, hey, Dr. Ben, it's so great to talk to you. I appreciate you. So if people want to connect with your work, they can go to your Facebook group, Next Level, and they can join your other physician group at the Peptide Researcher.

Yep. PeptideResearcher.com. PeptideResearcher.com. And if they need to by product, then you also are affiliated with legacy bioscience.com. Correct? Yeah.

So they can, they can reach out all the phone numbers. There's a lot of companies out there. Some of them are from other countries or neighboring countries.

And it's good to know that you have some kind of oversight over the quality control. Cause you never know batch to batch. US based. Yep. All right, sir.

Well, thank you so much and hope to see you again real soon. Absolutely. Thank you. Okay. Take care. Thank you for tuning in to Doctor Talks. We hope today's episode has enlightened and inspired you on your path to optimal health.

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