Introduction to Doctor Talks and Shawn Wells

Maybe they're doing nothing. Maybe they're actually hurting you. So this is where it definitely pays to go with these top tier brands that are doing all the additional testing.

And it's not like I've worked at some of these companies. As you mentioned before, the bio trust, I'm at ties. We had teams, teams of people doing quality control.

You know, five, ten people doing quality control. Like responsible for that testing, tracking that testing, seeing where this lot is at, making sure that everything's okay with that lot.

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.

In 2023, the global supplement market was valued at approximately $360 billion, and it's projected to reach about 385,000,000,000 in 2024. The market is expected to continue growing at a steady rate, potentially doubling to 758 billion by 2034.

This growth is driven by increased health awareness, demand for immune boosting supplements and an aging population. I am so ecstatic about our guests today.

I have brought on somebody to answer all of our questions about supplements. So I was doing some research prior to this podcast and my mind was blown.

A lot of you reach out to me with questions about supplements. So of course I found you guys the best, the best person to answer all of these questions.

So his name is Shawn Wells, and he has a background in business administration and marketing. He has his master's degree in nutritional biochemistry from the University of North Carolina at Chapel Hill.

His professional journey saw him as the chief science officer at Viatris Nutrition, overseeing brand marketing, R&D, regulatory chain, quality control.

And this was pretty impressive as this company was $125 million for your company. He then went into further working with other supplement companies. Most notably, he worked on the acquisition of Dimetapp assets by Post Holdings.

And he's been a serial entrepreneur. He owns multiple partnerships and stakes in a lot of different supplement companies. But he's got an expertise in biohacking, anti-aging, and health optimization, which is why I found him for you guys.

He is voiced as the world's greatest formulator in the supplement industry. He's got over two decades of experience and is formulated more than 1100 products, which he distributes worldwide.

He holds over 40 patents, including multiple things, which we're going to ask him about. He's got one right now that we that I really want to ask him about.

And you guys have asked about it as well. He is also a fellow in the International Society of Sports Nutrition and has over ten years of experience as a clinical as a chief clinical dietitian in both acute hospital and skilled nursing settings.

He's been featured in five global recognized documentaries as well. In addition to that, he's on tons of TV and radio every week he has a radio show, One Life Radio, that's aired weekly on iHeart media.

This is why I really like Sean. So you guys know that I have a personal interest in health and my own personal story. So he's overcome a personal health challenge himself, including Epstein-Barr virus, chronic chronic fatigue syndrome, fibromyalgia, depression, insomnia, obesity, and a pituitary tumor.

So he's like an endocrinologist dream. And he stands for as a beacon of hope and informing other people and countless individuals on how he did this. He's got a passion for health and wellness, and he's very you know, this is obvious in the work that he does.

He contributes to masterminds, conferences, magazines, TVs and so he also has a company called Zone Halo where he helps create and formulate supplements.

So please help me welcome Sean to Back to the basics. Thank you. Thank you. Quite the introduction. So. So before we start, these are some facts that I pulled, and I think I sent you this and I was telling some people yesterday on social media, it's estimated that a significant percentage of dietary supplements on the market are of floor quality.

The FDA says up to 50% may have issues like inaccurate labeling. Contaminate or, they're contaminated or they have unverified claims.

Supplement Market Problems and Quality Control

The AMA or Jama, also, both of them published studies that more than 20% of supplements sold in the US were contaminated with unapproved or banned substances.

And then they said that a lot of the factors that contribute to poor supplement regulation includes or poor supplement quality includes lack of regulation. Right.

So you can talk a little bit about this contaminant. So a lot of these supplements have heavy metals like lead and mercury that you can actually test, which is crazy right.

Because nobody would eat lighter mercury. But we're putting these in supplements and then a lot of them are mislabeled. And so blows my mind because this is a $385 billion market.

And people are putting half of them are putting crap in their body. Is that basically your understanding? Yes. I mean, to some degree, unfortunately, that is the case.

Now, food too is probably one of the most important legacy brands as far as quality goes, and was probably the one that was most hurt by Amazon. Coming on to the market.

You know, a lot of these mom and pop supplement stores would be half their store would be now foods, right? It's a very, very big supplement brand. And so they've done a good job, at testing out a lot of different supplements.

And if you've looked over the past year and a half, they have tested a number of supplements on Amazon as well as Walmart, especially ones that were just pure ingredients.

For example, they looked at Burberry and they looked at Astor's, and then they looked at, ginseng. They looked at about 15 different ingredients. And what they found on average was about 50 plus percent were not meeting the label claim, sometimes as high as 70%.

And about to your point that you were just making about 20 to 30% or so, had no active at all. And this is unfortunately very common on on Amazon, where it's just a race to the bottom in terms of price, where you can manipulate reviews.

And so that's how, some of these companies end up winning in terms of the Amazon algorithm is just having a great price, quickly delivering, and they're intentionally making supplements that have no active at all.

Now foods really push this on back on Amazon. And now Amazon is, demanding a little bit more testing, as is Walmart these days. So fortunately, that did help the industry.

I would say, but it's not at the the place it needs to be. So you're saying 20 to 30% of supplements you purchase on Amazon may have zero active ingredients?

I want to make sure everyone hears that because I tell my patients this, too. You know, when you talk about supplements and you talk about wellness, a lot of times you'll say, well, I understand this is the supplement you recommend, Doctor Smith, but I can buy it on Amazon for half the price.

And my response to them is, well, do you know what you're getting on Amazon? And you're telling me now that 20 to 30% of those have nothing in them at all?

Or worse, sometimes they have bad things in them, right? So I was just going to get to that part. So that does happen to sometimes potentially it is because of the raw material supplier getting like, very cheap raw materials.

And the company that is a very cheap company, these fly by night, companies that are on Amazon, for example, that you have never heard of, those are ones that are not going to do third party testing.

They're going to take the word of the raw material supplier. The raw material supplier is doing what's called dry lapping. I'm doing air quotes for dry lapping because dry lapping means not doing any laboratory testing at all.

It just means typing your testing results, and then it gets passed to a contract manufacturer. That's more of a fly by night contract manufacturer that bottles this product and puts it out.

And they didn't do their testing. They're taking the word of the raw material supplier, because all of that extra testing costs money and slows things down.

Now, if you're doing top tier raw material suppliers, if you're doing top tier contract manufacturers, if you're with a top tier supplement brand, none of those things are going to happen.

But unfortunately, yes, a lot of the stuff in particular that is on Amazon, especially from these brands you've never heard of, could have no active test well below the active or contain contaminants that you don't want in there.

And that is a huge frustration, for many of the people that are buying these products thinking they're going to work, thinking that it's going to impact their health, and maybe you're in a place where you really need impact.

Maybe you're on the edge of, myocardial infarction or stroke or what have you. CVA and you're taking these supplements to help you. Maybe they're doing nothing.

Maybe they're actually hurting you. So this is where it definitely pays to go with these top tier brands that are doing all the additional testing. And it's not like I've worked at some of these companies.

As you mentioned before, the buyout trials time, at times we had teams, teams of people doing quality control. You

know, five, ten people doing quality control, like responsible for that testing, tracking that testing, seeing where this lot is at, making sure that everything's okay with that lot.

So that is, it's expensive. It's very expensive to do everything right. And these companies that just pop up on Amazon, they're not doing everything right.

Yeah. So and that's I think what really fires me up about this too, is like, I am so happy that the world in general, we have this like push for wellness.

Right? So like the statistic that I read to you said that by 2034, you know, the supplement industry is probably going to double and be close to $1 trillion a year because people are at increased awareness about, hey, I need to be taking care of my health.

I want to live longer, I want to, but what's really frustrating is there are people taking huge advantage of those people and giving them garbage and or so.

Maybe taking advantage of them and just taking their money is one thing, but taking advantage and giving them something that could hurt them is where I get really fired up.

Like the lead, the Mercury, stuff like that. Like I have people who come to me, we try to detox from that sort of stuff, you know, then they're taking something every day that they think is helping them, and it's really hurting them.

And so I have, you know, I've been on this bandwagon for years. I've been on the proponent of, like, you know, if you bring me your Walmart Amazon supplement, that's whatever it is.

And it says it's got whatever, well, that's great, but nobody is really monitoring that. Right? So can you talk to that? Like I guess the question is like who regulates supplements?

The answers. No one. Right. You can make that argument. I mean, technically it it is. The FDA supplements are technically regulated. But the unfortunate thing that's happening is that there's just not nearly enough personnel to possibly follow the regulations.

So it's really only when something rises to extreme red flag level, when there's recalls and things like that, that you might see a company run into issues.

So I would say there is regulation, but it is largely unregulated. So if I decided tomorrow I wanted to make a supplement company pop up and start making crew clean, I could probably do that if I came up with the name, had a manufacturer, did it, bottled it and sell it. Like, is there any sort of process you have to go through in order to do that?

That's highly regulated? Yeah. Again, highly regulated is is a tough word because I say it's not. I mean, the FTC also gets involved with claims, whether you make that on a website, on, on radio, on, in print, things like that, that they can get involved, but and you're supposed to submit to the FDA when you have, complaints that come in that would include your adverse events and serious adverse events.

Adverse events. Or when someone says that I had gas, I had heartburn. I had nausea, vomiting. Serious adverse events are when they end up going to a clinic or a hospital, with those symptoms and then those are supposed to be, investigated by a third party medical review team, and that's submitted to the FDA.

And again, good companies do this. I've at every company I've worked at, we've done this. We've had a team do this. And but again, I've talked to many of these companies that are these Amazon type companies and they've never even heard of that.

So they're definitely not doing it so that there's, there's a lot of companies doing the right thing, and there's a lot of companies not doing the right thing.

And it kind of becomes obvious when you're looking at a company like Now or Thorne or Designs for Health or Nordic Naturals and, you know, some of these brands that have been around for, you know, 20, 30 plus years and they've always tested out when, like a Consumer Reports test them or, you know, some of these other, you know, groups test them.

They always test out. But there are certainly these companies that are on Amazon in particular, like we said, that, you know, two years ago did not exist.

And they're like a 1 or 2 person company. And maybe it's being fulfilled by Alibaba. You know, you got all this the tick tock brands and all these things that are happening now and people are buying these things up all the time.

And to your point, they can have heavy metals, they can have banned substances, they can have things like Psalms in them or, or anabolic substances or even drugs, like there's a lot of, these erectile dysfunction, pills that are, you know, at the gas station that contain metabolites or analogs.

Cialis or Viagra, etc., and that could be in a natural libido capsule that's on Amazon. Why is that a concern? Well, a Pde5 inhibitor could cause blood pressure issues in someone that has blood pressure, problems already that has hypertension.

Or again, it's at risk for stroke or, or heart attack. And we don't know like these things are actually in there. And you know maybe that's something they put in there so that they get good reviews.

But it's frightening. There are a lot of these companies that are doing very dubious things. So how is there a way to know that supplements are safe? Like is there a way to tell if, like, the ingredients are really what's listed?

Do you like what you've heard so far? If so, modern endocrine is now able to provide telehealth services in eight states, including Arizona, Nevada, Oklahoma, Texas, Ohio, Illinois, Michigan and Georgia.

If you would like to become a patient, visit our website at Modern endocrine.com backslash contact. You can also email us at hello at Modern endocrine.com, or call our office at 405286 1571 to schedule an appointment.

Please note we no longer accept insurance for new patients. However, we do have customizable membership programs available. Your first visit will include a detailed intake, and lab orders will be provided to further assist us in developing your ten Stages to Ultimate Health plan.

We do offer discounted lab rates with a nationwide lab service. And now back to the show. I have a list of things.

How to Identify Safe, Transparent Supplements

So one I look for a brand that's been around potentially that's a good time to, that they don't make crazy claims. If a company has 880% more muscle, that is, the FDA describes that as something that is, meant to be, manipulative, essentially.

Like a lot of times you can manipulate data, right? Like where it's, you know, the, the, the active group or the experimental group, you know, had a 3% change and the placebo or control group had, a 1% change.

And then it looks like, wow. Like the difference is massive, you know, like, but yeah, statistically it would be massive. But if you look at these two things next to each other, basically both of them are doing next to nothing.

But like if you can manipulate statistics, you can do that. And so the pharmaceutical company likes to do that too, right? Yeah, that's certainly so another thing to look for is full transparency.

So I want to see someone that is listing the, appropriate, ingredients. So they're listing the actual ingredient. If it's, you know, an herb, then it's a plant part.

That they're that they're listing, like the root, the stem, the leaf. They're listing genus and species of that herb. They're listing the the active that it's standardized for and that percentage, and then they're listing the dose and all of that.

Is there. And then every ingredient is like that. And there's a reason for every ingredient. If it's a blood sugar product and it's got 34 ingredients because every single ingredient has been mentioned in some type of blood sugar data, that is really stupid, right?

That's a proprietary blend that makes no sense. Like just pick the one ingredient that has the one mechanism of action that makes sense and look for complementary or even better synergistic ingredients and put them together that each have different mechanisms of action.

So and when you have full transparency, you can go to examine. Com, Google Scholar PubMed. And you can go look these things up and go see for yourself what's the appropriate dose, what the appropriate plant part is, what the appropriate standardization is.

Because here's like another way that you can scam someone is one. You've all seen proprietary blends, right. So that's going to be 40 ingredients. And it's 700mg.

It has to be by law put in order of descending mass. So the first ingredient could be 699mg. And the other 39 ingredients could be one milligram. This should be illegal, but by law it's okay.

And then if you ask the brand, they're going to say it's our intellectual property. We're protecting it. The only time I will accept that is if they've done studies on it, on their finished product, they've done studies on it.

Otherwise they're just lying to you and they're just trying to save money. Because I guarantee that first ingredient is the cheapest one, and the ingredients in the middle to the end are the most expensive ones that they're very testing.

Okay. So then the other thing that can be, quite, quite dubious when we're looking at these is something like ginseng. Let's say, it's a ginseng product.

One way to save a lot of money would be that you have the whole ginseng, the whole plant. It's only the root that contains the ginseng site. And it's only something that standardized to ginseng.

Size is probably the one I would choose. But if it's not even root, if it's whole plant. Now they're saving lots of money. So this is where you get burned on this stuff.

And if you're buying something from from now, from gyro, from life extension, from thorn, from, you know, designs for health and, and all these companies, they do not do that.

They do not do any of these things that I'm talking about. But there are a ton of brands that are in Walmart and on Amazon.com that are doing this without a doubt.

So you should be very particular about proprietary blends, because I see a ton of that. Like my patients bring me supplements all the time. A lady brought me one today.

I'm taking this proprietary blend of, you know, whatever it is of my arms. Yeah. And I'm like, yeah. So okay. So if so, you want to make sure that the brand has been around a long time.

You want to make sure they don't make crazy claims like 888% more muscle mass. You want to make sure that full transparency and what's actually there, like the type of the plant where it's coming from, the percentage, the dose.

So you can go look it up. You want to make sure if there is a proprietary blend, they have actually done a study on that one that I can think of. And you may know about this. Arturia.

So have you heard of Arturia. So I think that they're doing studies on that currently. That's like a proprietary blend. I can't make it something other than something like if it's a blended ingredient and they're doing studies on it, like where there's two, two herbs and then I can see that, like, again, if you're doing studies on your finished product or it's going to be a branded ingredient where it's two herbs together and you're doing studies on it, great.

That's fine. But in the case of 99% of these things, when they have proprietary blends, it's it's just manipulative. Yeah. And then you just want to make sure that the part of the plant that has the efficacy is what is actually being used, not the whole plant.

Yeah, that all makes sense. You want to make sure that there's a proper, sell by date on there that it's stamped, that, you know, the lot and you can you can always go back to the company and say, I have this lot number with this manufacturer or sell by date on it.

Tell me how this product tested out for the raw materials as well as the finished good. And by law, they're supposed to tell you they're supposed to have those results.

It's really worrisome when a company, if you were to ask that, says, I have no idea. I don't know if it would have that. And that's what all these Amazon companies would say if you were to call, you know, one of these clinician brands, like they would have that on the ready.

They would have it all like logged in their computer by date by lot. They could pull everything up. Yeah. And so for our listeners, if you get stuff for modern endocrine, we can get you all that information.

Every single one of it. Just FYI, your Amazon or Walmart I don't know. So okay, so then companies do add fillers to ingredients in supplements to make them less effective because it's probably more cost beneficial for them.

Is that what you're saying? The FDA what you mean by fillers. Like usually fillers means like the excipients. Like so those would be things like, mag steroid and calcium silicate and whatever.

Usually those are in there as flow agents are to be like anti hygroscopic to keep moisture out or to actually fill the capsule literally because you don't have enough material in the capsule.

But if you just mean to add an ingredient that doesn't have efficacy. Yeah, they do that all the time for sure. Yeah. And so is there a way to look on the label to know, like is there certain things that if you read a supplement label you'd be like, and that's probably a filler, like are there certain.

You know, because like when I read food labels, there are certain things I'm like, yeah, canola, canola oil, you know, oil, stuff like that. I'm like, nope, nope, unless it's olive oil.

So there are certain things that like, you're would be concerned about in a, in a supplement. I mean, there's people that are concerned about if you are getting into like excipients and things like that, there are people that have concerns about maxed straight about things like titanium dioxide, which is like a whitening agent.

You know, and certainly like even maybe in your protein powders and things like that, lecithin that it's soy based and is GMO, which almost 99% of soy is going to be GMO.

Which means it has glyphosate and all those things. You know, all of that could be, a concern. Potentially, is there a way to look at supplements and know that they're third party certified?

Like, do they have to have something on them that says that? Like, they've been like third party tested? No, no, there isn't. But again, you're you're going to have like the bigger a company is like if a company is doing more than like I would say $100 million in revenue, that they're at a point where they can't like one bad situation could take down the whole company.

But now you have companies that are doing 50 plus million on Amazon that literally have one person. Ten years

ago, this would have been absolutely impossible.

And now it's possible. So you're seeing like these kind of what would have been anomalies years ago in some ways we've gotten worse, and in some ways we've gotten better.

There's more awareness now than ever on how to buy a quality supplement. But I think Amazon really did set us back many years. Are there any brands in particular you want to say or you don't want to say?

As far as you're clear up on Amazon and I'm fine with either way. You know, you don't have to. I just I mean, I think like when you're when you're on Amazon, here, here's actually another problem that comes up, I and I forgot to mention this one.

So I mentioned all these good brands that you should trust. One thing I didn't mention is on Amazon, there are third party sellers that are counterfeiting those products because now Thorn Nordic Naturals Life Extension sell a lot.

So if you get like Joe's Crab Shack selling Thorn, do not trust it is a very good chance on Amazon that it is counterfeit. I've heard up to 50% of some of these big brands that were on Amazon are actually counterfeit.

So this, this, this is just another wrinkle in the whole equation. So if you're going to buy on Amazon you'd want to buy like first party or like, I don't know, a GNC or Vitamin Shoppe or you know, someone like that, like was selling the brand.

Maybe you could trust it. But a lot of these other companies that are the Amazon seller could be counterfeiting it. And so and if you look in some of the reviews, there's even people that that show this like we're like they're like, hey how come like I got this product, this time and I got it last time.

And they're two completely different color capsules. You know, this one's yellow and this one's white. And then the, you know, brand gets on there and says, well because we didn't make that one.

Yeah. So one and I love Amazon I'm not dogging Amazon. They sell convenience. And I love convenience. But there are certain things you can't you know I like.

You cannot cheat your health.

Choosing Omega-3s and Other Targeted Supplements

You can't be cheap with your health. You shouldn't be cheap with your supplements. You shouldn't be cheap with your food, and you shouldn't be cheap with any, you know, protein, like anything that's going to be ingested into your body or put on, you know, put on your body and has to do with your health.

I you've got to be careful. So I've, I, I think you would like to know this. I've never bought a supplement on Amazon. I never planned to but I you know, I've been saying this for a really long time, so how about so I have some questions from some listeners.

So some of the safest, most reliable brands I had a lot of people ask that. You said Thorne. You said designs for health ortho molecular maybe. I think you said like what are are there any other ones like that you want to throw out there, even like on the kind of cheaper end of the scale like now, Jethro at Swanson.

Like they, they test out they may not be high end, but they're quality companies as far as what you're getting on the label is actually in the product.

You know, they're not like great formulations. They tend to be like single ingredient and, you know, maybe under dosed or whatever, but at least like it is what it is and the quality control is there.

But yeah, when you get to the higher end, like you're a pure encapsulation is another one. I'm a big fan of, but you

know what? I got duped on Amazon the other day.

I went to buy Pure Encapsulation, and then it was like, pure capsules or like, like it was like. And it looked like the same logo. It looked like the. And I got duped.

And then I got it. And like, literally the capsules had, like, little black specks in the yellow powder and like, oh, like I got I returned it and and I realized that I bought some knockoff brands.

So, you know, there you go. Okay. So the, you know, the master, the master supplement man even do it on Amazon. Okay. So I had a lot of listeners that asked you about how do you pick a good omega three?

I'm interested in your response because I'm not I think omegas are great, but I'm not a just omega three type of person. I'm an omega. You know, you respond, but how do you pick a good omega three?

Yeah. So there's a lot of really bad fish oil on the market that is. Yeah, rancid. That is, molecularly distilled from it's rancid. And may not be bioavailable, may not be its ideal form, may have a fair amount of heavy metals depending on where it's sourced.

So again, I would go with these high end clinical type brands, especially when it comes to fish oil, because this stuff is really bad for you if it's not a good one.

So what you're going to look for is the iPhone iPhones. That is a regulatory body that does do additional layers of third party testing, similar to if you had like NSF or Informed Choice.

When you're an athlete that gets really expensive, by the way, like when you get the NSF or informed choice testing, you have to test all the raw materials, the finished goods.

You have the whole back, the lot. They do heavy metal testing, banned substance testing. It takes like an additional 12 weeks of like holding back the lot.

That's why I products that have those certifications are much more expensive. But if you're a tested athlete it's important. Right. So the same thing with the fish oil if it gets really expensive, but it can be worth it.

And to go from there, you do want it, molecularly distilled ideally. But you want to make sure that it's coming from, like, Nordic waters. And that's why companies like, Carlson and Pralines, Nordic Naturals, they have a long history of, of doing the right thing.

And if you bite the capsule and it tastes fishy, that's a bad sign. So it should taste very clean if you bite the capsule. So that's one of the first things that I do.

You should not get those fish burps. It's also known as like the technical term is repeat. Like when you get the burps and they taste fishy. That's a bad sign of your fish oil.

And you want Nordic waters because those waters are much cleaner. And what happens with fish is the the kind of the larger fish that are predatory on the smaller fish, end up absorbing all these heavy metals because they eat a lot of other fish in their lifetime.

So when you get like the, the tuna, if you will, and some of these fish that are feeding on a lot of other fish, they tend to collect a lot of the heavy metals, whereas like a small fish might not.

So that's also a concern. And if you go to these Nordic waters, they tend to be much cleaner waters, where you're not finding those kinds of things as much.

Whereas like if you were to fish in the Pacific, wouldn't be so clean. Okay. So that's a great those are all great points. And, you know, I agree with that.

Like fish oil, the capsules are really big to a lot of times. So I tell people like the way I take fish oil, my fish oil is I bite it and I just suck the fish oil out of the capsule, and I throw the capsule in the trash.

The one that I take takes kind of like lemon, so it doesn't bother me. Mine also a kind of a fan of of fatty 15. And we can talk about that later. But, I mean, I like some of the, the ratios of the, the omega in that.

So I would agree with that though. If you take something and you're burping up something nasty, it's probably not what you want to swallow. Yeah. So somebody asked does tumeric deplete iron.

And I don't know that it does. But I said I would ask you what are your, not not that I know of. So I mean, turmeric is the herb which you're finding now being 95% curcumin.

Noit, largely curcumin. One ingredient I've come out with is a metabolite of that called tetra hydra curcumin. And I'm a big fan of that's actually, I would say more effective in terms of its antioxidant potential.

And as far as, glucose modulation, but as far as curcumin goes, it shouldn't be, impacting iron. I could see if you're getting one that's cheap, that has a lot of heavy metals in it.

And my for sure. And then the other thing that impacts a lot of iron, well, women obviously when they menstruate. But then if you have H. Pylori that's untreated I see this every day.

If you have H pylori, it eats iron. And you get this more commonly. Yeah. And B-12 and you get this more commonly when you have Hashimoto's or autoimmune condition.

So I take care of a lot of women and men with Hashimoto's. So they're more likely to get pernicious anemia and H. Pylori, and that will kill your iron and your B12.

So another question I got a lot from people is my PCL, PCOS, PCOS, women out there. So I have a lot of PCOS women and you know, it used to be that with PCOS you had to have a high testosterone.

You don't anymore. There's a lot of people running around with adrenal fatigue, so they have low testosterone. But I had a lot of people reach out to me and say, what is the best supplement I can take for PCOS?

And I don't know that it's one. I think there's a couple things they should take, but what is your takeaway on that? Dihydrate? Berberine. The ingredient that I've, patented.

It's, really controlling PCOS. There's a lot of, you know, it's kind of multifactorial. But as far as what we're seeing, the biggest needle mover is, related to, blood sugar and metabolic health, metabolic dysfunction, if you will.

Like a lot of people that go on a ketogenic diet, a carnivore diet, you know, something that, low, glycemic as well as potentially high fat, tend to see much better outcomes.

But along those lines, people that take exogenous ketones, words like MCTs or glucose disposal agents all see benefit and see their hormones regulate from there.

Quite substantially. Like when 87% of the population is metabolically dysfunctional. That is a big reason for a lot of hormonal dysfunction, a lot of mitochondrial dysfunction, and, a lot of pro aging pro disease scenarios.

So I would actually say now they're estimating 93% of the US population is in metabolically, we're getting worse sick. So and I and I would say that from what I see that is accurate.

If not I mean, and it's true PCOS is a disease of of inflammation and insulin. This regulation. So the berberine that you have that you have patent that will work with lowering insulin doesn't do anything with the hormones as far as helping with estrogen metabolize as, testosterone or anything like that.

Are there any things you recommend for? Yeah, not those directly, but when you two to the point you're just making it does regulate, inflammation. Dyslipidemia, hypercholesterolemia, etc..

So it is affecting those and a lot of times the hormones will fall into place as far as estrogen metabolism, you know, that's one you can look at, I think, and and, you know, some of those kinds of things and, potentially, on the testosterone side, you know, you can look at, things like, for Doja Cat, restless or tongue cat.

Lee, you can look at zinc. Boron. You can look at DHEA, potentially. I mean, that has, number of pathways. It could go down, but, of course you can always look at, TRT as well. So.

Yeah. So you can and I, I'm okay with that as well. Okay. So. Oh perfect. I, I want to ask you well I'm going to go here first. So I'm a huge proponent of gut health.

I think you are as well. I think that the more and you know I've, I've been at this eight years now.

Gut Health, Postbiotics, and Metabolic Support

And I was just telling my husband last night, the more I do this, the more it all. Everything just ties back to the gut, your brain, your depression, your anxiety, your thyroid, your hormones, your it doesn't matter.

Like what? And I used to get really frustrated because I do a really good job of checking a lot of labs and fixing all these hormones, and I would fix all these people's hormones, and then on paper they would finally look great.

And they're like, but I don't feel anything. And I'm like, what do you mean you don't feel anything like everything is better? And I think a lot of it is.

Our guts are trash. And so I also I'm very passionate about mental illness because there are a lot of people walking around out there with just a lot of bad thoughts.

And they, you know, they don't understand. They get they get really frustrated that they've been sick for so long. They're tired of hurting their, you know, and so can you give us like a five minute synopsis on the importance of gut health and maybe some supplements that you recommend?

I kind of have a triad that I give people if they don't want to clean out their gut, but can we can you give me a little because because it's very under looked and unfortunately like, you know, mental health, I mean, you can fix a lot of it with gut in with, with some supplements.

We don't have to give people all these terrible medicines that make you feel like zombies. And I think that, you know, we there's some education that needs to happen with providers and people about that.

There's so much I could say here. First off, just even the metabolism of drugs and supplements, you look at the bio individuality, the biodiversity that's going to happen and how you break these down, what their half life is, the enzymes, the epigenetics that you have.

There's a lot at play there in terms of your GI tract and your liver, that are going to play a big role and just how you metabolize these drugs and supplements.

So what works for one might not work for you. This is why, even when I've done, probably more than 100 studies on supplements, and I can tell you, no matter what, we're always looking at the average age, right?

The statistical mean, like in the middle. But trust me, day to day, there's there's fluctuations and there's also hyper responders and hypo responders that are out on the, the tails.

And that's not just some freak or they didn't get it or they didn't do it right. Those are people that have different metabolisms, different epigenetics.

And they're metabolizing these things, different. Now, along with that to the point you're making, there are about 70 to 80% of your, neurotransmitters are in the gut.

Okay? About 70% of your immune systems in the gut. We used to think of the gut as just digestion. Then we discovered it was where most of the immune system was, and we discovered it's where most of the neurotransmitters are and the whole gut brain axis.

When we're a fetus, the gut and the brain are essentially together and they separate out, like as we, you know, grow and we call the gut our second brain now.

But there's an argument that could be made that that's our first brain. And the one that's in our head is actually the second brain. And so that class, of, of, bacteria that's in the, that's in the gut that would affect those neurotransmitters.

And ultimately your mood is called psycho biotics. And there's a lot of research there. And then we talk about pre pro and post biotics. And collectively if you were to give all of them it's called syn biotics psi.

And like like synergistic and prebiotics are going to be things that feed the bacteria. Now you have to be careful with this. People that tend to get very gassy when they have prebiotics, things like inulin f0, as you know, the chicory root, things along this line, these resistant starches and all these kinds of things.

That's because their gut is this biotic, and it's this biotic and you're feeding it and you're going to get more dysbiosis, and you want to be in a state of what would be called probiotics, which means like a positive gut.

Microbiome. And when we talk about probiotics, that's going to be the bacteria that are filling up your, your GI tract. And that would be the different strains that you've heard about, like Acker Mansion and, you know, there's good ones and bad, you know C difficile.

Right. Like that's one that I dealt with a lot clinically and even things like very you know, these are going to be throughout the gut. And the thing that I, I'm reluctant to do, though, is I would say that a lot of supplements that supply probiotics are going to be under dosed, are not going to be stored properly.

And then you can run into, like mono culturing where you're giving too much of one over the other, even if it is effective. The body can be highly intelligent.

If you put it in a place to be that, and it's going to change the bacteria makeup depending on where you are, what the the immunity needs are, the foods that you're eating, the people that you're around, the places you're going.

And so we actually want it to be variable. What's maybe the most interesting area right now is the post biotic. And that's where you're talking about these short chain fatty acids that the probiotics are ultimately making.

The short chain fatty acids like, the smallest would be C-2, which is the acetic acid or acetate. The next one would be C3, which is propionate like acid.

And then the one we hear a lot about is butyrate or butyric acid. And I've worked on a form that's a triglyceride form that's more bioavailable. That's it's called tri uterine.

And that is a great form. That's probably one of the best things to give. But we also look at like the quality of the gut lining. And that's where we're going to look at, you know, things potentially like collagen is going to make an impact.

Glutamine is going to make an impact. Because a lot of people have they lack tight junctions. And when you don't have these tight junctions, there is an opening there.

And you can actually get whole food particles into the bloodstream. And that causes all kinds of autoimmunity. In terms of the reaction to like from your body when you're getting, you know, gluten or, you know, whatever it is, like

literally directly into your bloodstream, and then on top of it, you have this kind of, thick zone in, on the, on the gut lining as well.

And, you know, this is an unhealthy gut. So we want to do as much as we can to heal the gut. And if you've seen like fecal microbiota transplants, which I've seen clinically, with cases like VRE and see death, we see people like, literally like within hours radically change.

You can put them on all kinds of antibiotics and you might actually make it worse because there's resistance. But we see radical change. And if you look at the mouse models where you have the obese mouse and the skinny mouse and where they switch the, the, the FMT, where they put the, feces in the other one, they transplant it, the skinny mouse gets fat, the fat mouse gets then, I mean, it's it's pretty crazy what's going on there.

And we do see a lot of our, our metabolism and our metabolic health, obviously in the gut too. And so to your point, it probably is the most important thing for our mood, for our health, for our munity, for our metabolism.

And it's a very underappreciated. Yes, I agree, I tell people all the time, like I eat to live, I don't live to eat. And I and I believe that because, I mean, there's you're asking your body to do so many things.

And like you said there, you know, there's all these different roles and, and I just really got into gut stuff like in the last year. And it just kind of found me.

It's been pretty interesting. I've been on this journey. I think I kind of told you about trying to figure out, like, what is my true niche and what do I want to do?

And sometimes I think it might be gut health is calling me more than I'm calling it, but it's very fascinating. And I do have a lot of patients that, you know, we've worked with and have gotten a lot better in when your guts good than the rest of you can heal, too.

And so it's it's a fascinating line of work. I also have found a lot of people that have severe anxiety and depression that when you fix their gut, they can actually absorb, you know, tryptophan and they can absorb things.

They need to make neurotransmitters. And then, oh my gosh, they're making dopamine. They're making serotonin. You give them some methyl, you know, a methylated B vitamin, maybe some Sami and you're fixing their MT4 and you're fixing their T mutations.

And that's actually getting to their blood brain barrier. And oh my gosh they feel better. They're not depressed. You know it's just it's amazing what happens with just changing a little bit of the gut.

And so I think sometimes my patients are sick of me saying it. And sometimes I think they think I'm a little nutty. So I'm glad that you agree with me.

And that was one thing I forgot to mention. So, like, I was actually drinking. That's I worked with these guys. This isn't a plug, but this is that has, apple cider vinegar in it.

And, apple cider vinegar is acetic acid. Really all the vinegars are there? Maybe a little bit more benefit to apple cider vinegar when you have the mother, which is a pseudo bacteria?

That's that cloudy stuff at the bottom of the bottle. Right. But vinegar, whether you're talking about rice wine vinegar, red wine vinegar, apple cider vinegar, distilled vinegar, it's all going to have acetic acid in it.

And that is that shortest chain fatty acid. That's that two carbon fatty acid. And what do we see. We do see gut health improve. We see blood sugar. Like it can be like if you take like a full teaspoon, like with a meal, we see a pretty dramatic impact on blood sugar, on hypertension, etc., especially with continued use.

So that just goes to show again, what I'm, what I'm talking about with these short chain fatty acids, whether it's

butyrate or acetic acid, etc., they can really affect, gut health.

I believe the post biotics are probably the most important piece, and I think we're just starting to dig into those now. And what we're seeing is the, the C three that I was mentioning propria noac acid actually athletes have the highest levels of propria nomic acid.

So there may be and I think there's there's so much to be discovered on this front. Like we just we don't know what we don't know yet. It's very new. The the short chain fatty acids.

So for listeners who couldn't see him, who are not tuned in on YouTube, he was holding a can of life cider. Is that correct? What it was called life cider and so he's saying it is a C to acetic acid.

So like vinegar that you can drink. And then to be honest with you, I'm very familiar with acetic acid. I'm very familiar with tri butane. I have a, butyrate builder supplement that has a lot of that.

I take it every day. I don't know anything about propionic acid. So is that something you can take? Is that something that are you working on? Something you should.

You and I collaborate on something with this? Is this something you can't talk about yet? Yeah, well, I hope that. No. Okay. Okay. So a couple of other questions I have.

And so I know people are dying. I'm dying to know this too. What supplements do you take every day. What is like a must? Oh, let's start with this. What is a must that you think like, give me 3 to 5 that every human could benefit from every day.

If you had to pick 3 to 5 supplements. And then I want to know what you take everyday. Okay. So the tri beta and that we were talking about before, I believe in deeply, the methylated B vitamins.

You were talking about that before some methyl folate which is also known as five methyl tetrahedra. Folate. That would be methyl cabal lemon P5P. You know, things along those lines, those are going to be incredible.

Creatine. Great creatine. Everyone thinks this is for muscle strength and power. That's true. It's great. It's great for that. That's where we kind of discovered it.

It is a powerful buffer methyl later. But yes as you're pointing to your head we're we're not only seeing that it's neuroprotective and improving like traumatic brain injury outcomes.

And ATP is what it's generating. And your heart and your brain demand the most ATP in your body. So that's where we're seeing it have dramatic impact as well.

But we've also seen a newer study where they gave a larger dose of creatine and people were under slept. And they had better, wakefulness after taking the creatine.

So, there's a lot and I can tell you it affects bone health, reproductive health, like with the testes and the ovaries. It's it's really powerful. I believe that everyone should be taking creatine.

And yes, it does spare muscle and protect muscle. And that is one of the most important indicators of longevity when we live in a world of sarcopenia, obesity.

What else am I thinking? Dihydrogen berberine I mentioned before. So yes, metabolic dysfunction absolutely should take it. It increases GLP one. It increases AMP k.

It is really potent at lowering blood glucose, improving insulin sensitivity. But we also see that whole pathway with with AMP K which is going to affect the sirtuin genes and telomere length and all those kinds of things.

Similar to how we saw metformin be so popular with the anti-aging, people for for decades. And I think dijo berberine is one of those ingredients that's just going to help, because when we see even healthy people lower blood glucose or insulin further, even beyond what we then normal limit, we see that growth hormone levels.

We see that, resilience improves further. There's really no, like, unhealthy kind of low end, you know, to that, obviously if you were to have like hypoglycemia, that's one thing.

But I'm talking about like where you're kind of normal glycemic but lower, where that normal glycemic would be. And it's same with CRP, like, you know, like, if we can get that low as well, then and we're going to see, someone be healthier.

And so we do see that when you're taking things like metformin or in this case dihydrate, berberine dihydrate, berberine is about 5 to 10 times more bioavailable than regular berberine.

You don't get the GI distress or have the bio individuality. And so the doses are a lot lower and last longer in plasma.

Daily Supplement Stack and Mitochondrial Health

So you only have to take it twice a day versus three for berberine. So that's the upside of it. Another ingredient that I've brought out that I would say is really important, to the market is ergo thinning.

Ergo thinning could potentially be the next new vitamin. It's been really exciting. All the research that's been coming out. It is a mitochondrial antioxidant.

It protects the mitochondria, not just a cellular antioxidant, but a mitochondrial antioxidant. What's really interesting is we have a unique transporter system for it in our body, as well as a unique storage system for it.

The only other ingredient that I know of that has that kind of, regulation and transport and storage is iron. And you brought that up before. And that's an ingredient that is critical to human life.

And ergo, thiamin has been largely understudied. And we're just learning about it now because, you know, it's trace amounts that are really important to us.

And and we're seeing it impact again mitochondria ATP. We're seeing impact cognitive and heart health largely. And so there's a lot more research to be done.

But that one's really exciting. And when you look at like there's a correlation line, if you look at the countries that have the highest consumption of ergo thiamin, they live the longest.

And so there's there's more data to be collected. But that's one that I've been just really hot and heavy on and I believe is there a supplement people can take with that in it already or you're working on it?

There are there are a few products, out there that do have ergo thinning. I think there's there's a lot more coming, but it's it's pretty new to market.

Okay. Look for doses anywhere from like 10 to 50mg. But along those lines, ideally I would throw in things like, CoQ10 and in the form of ubiquitin on PCB.

I'm just a big fan of, of protecting the mitochondria because as we were talking about before with metabolic dysfunction, you have mitochondrial dysfunction, you have less functioning mitochondria and, lower number.

And when we do things that increase our resilience, it's going to, trigger mitochondrial biogenesis, which is going to increase our number of mitochondria.

And that stress on the mitochondria increases their function. So mitochondria really respond to stress. They increase in number and they increase in function.

And then we also see this with brown adipose tissue which is brown because it's mitochondrial dense. And so it's really important to stress your body in a healthy way.

And that's called for me says that's going to increase allostatic capacity, which is your ability to handle stress. So doing things like cold plunges and hot saunas and lifting weights and, fasting and maybe a ketogenic diet sometimes, and then a high carb diet another and, you know, like all this kind of stuff like that, you can do even like cognitive stressors are going to help on that front.

So, you know, putting your belts on the opposite way, taking a different way to work, learning a new language, learning an instrument. You know, all of these things are going to help, as well. So that actually increases neuroplasticity and Bdnf and all those kinds of things too.

So in the last year, I have incorporated cold plunging every morning, hot saunas every morning, red light therapy and learning a whole new, you know, learning the gut, which is, you know, mentally exhausting.

So my mitochondria should be a okay, like, no, and I'm not getting it. So I tell people like, we do hard things and I cold plunge every morning. Now we have a cold plunge at our office in for 5.5 minutes.

I sit there and the first minute I'm saying really bad words in my head, and then when I kind of go numb, I literally have to tell myself, like, you're making brown fat, you're making brown fat, you can do this.

This is really hard. You're like, I tell myself that you're making brown fat or, you know, you're increasing cyclic AMP or helping your mitochondria. But yeah, it's, this is why we do not only that, you're, you're actually increasing dopamine.

So like, I don't know if people know, like, just how important dopamine is to our lives. I think of like, I don't know if you ever saw I'm kind of a nerd.

And I think of Donnie Darko, and there's like, he's this kind of like, worm that he's like, following around the room like dopamine is like the thing that, like, moves us.

Like it's the reason we're doing almost everything we're doing. We're chasing dopamine. But there's healthier ways to increase your dopamine. So cocaine would have, like, a massive spike and a massive crash, and it's going to take a toll on your receptors, on your brain chemistry, and you're going to feel like the highest high and the lowest lows.

But when you do a cold plunge, you have a three hour lift of dopamine. When you have intimate sex with your partner, hopefully that you love deeply, you have increased dopamine for hours.

You know, these are the kinds of things that, like, are the healthiest forms of dopamine, where you feel good and fulfilled for hours and then you're not chasing other things.

All these things that we get addicted to. You don't need the social media as much. You don't need that, processed food as much. You don't need the alcohol as much.

You don't need the smoking or the, you know, whatever it is, the gambling, the porn, the all these other things that we could be chasing for dopamine fixes.

I agree, some people think I'm crazy, but it's true. You like, you hate it, but you do it, and then you feel so much better and it's it's just it's better for you too.

And it does help with, I mean, fat metabolism, lots of things. So okay so we've got tributary, we've got methyl fully

creatine and berberine directs. You said dihydrogen berberine and then ergo thiamin.

So these are your five. So we'll have to put together like Sean's you know Penn Sean's five pack at Modern Endocrine. Are there other things that you take every day like just you can just run down the list?

I mean, just, some other ingredients that I've worked on are actually my favorite because, like, literally, it's my work on them. Bhabha is an exercise mimetic literally mimics the signal from exercise beta amino acid, butyric acid.

When you're exercising intensely, like, for example, of hit high intensity interval training, your beta levels go up endogenously. I made a supplement form of this and it literally mimics exercise.

So you get Bdnf, you get VO2 max, improve, improve bone mineral density, decrease fat mass, increase muscle mass, etc. as a result of taking better di leucine is a de peptide form of leucine that I came up with that I thought there was.

Leucine is the thing that triggers amateur muscle protein synthesis, but there is a di peptide transporter di and tri peptide transporter in the gut called Pepped, one that transports the di and tri peptides 2 or 3 amino acids much faster than even a single amino acid, which seems counterintuitive.

For years, we didn't know why. Even when I knew about this, I didn't know why, but I thought it could be faster and maybe we'd see better results. It's 189% faster.

We see 60 to 80% more muscle protein synthesis, gram per gram. That's a game changer when it comes to muscle maintaining muscle mass or gaining mass. Whether it's for, you know, athletic purposes or aging or physical therapy and all these different clinical applications.

So that's pretty exciting. Why we know the peptide one transporters, probably there now is bio regulatory peptide signaling. I didn't know that when I was working on this about ten years ago.

I just thought for some reason it's there and this is cool. Now, I understand that a lot of these 2 or 3 amino acid, chains are there for a specific reason, like glutathione is a three amino acid, you know, tri peptide.

So, there's a lot of those like, in the body that have very important purposes. So and I think this science is super important to you were talking about my Condrey.

And I think mitochondria are important to protect and to. But glutathione is a huge detoxify. And so that's the other thing I see with people is like when you are trying to get healthier, you have to detoxify and you detoxify through your liver, which requires methylated B vitamins and glutathione.

Right. But then you have to also prove every day. So that's a problem because a lot of people don't do that and you have to sweat. And so I do think that glutathione is something, you know, our poor livers are under just a giant amount of stress with the food that we eat, the toxins we consume, the mercury and lead in the supplements we buy from Amazon, the air that we breathe, like all of these things.

And so I do think that glutathione is some I mean, I take one if I own it religiously. So you know that or and acetylcysteine would be again, to raise glutathione levels in vitamin D, I'm assuming you take some tablets, it's going to say two really like obvious ones, but are that are like ridiculously critical.

Like what's crazy is every time I do a post on either one of these, like they're my viral post and they're like the two most simple things is magnesium and vitamin D3.

I like, but they're so important. Like, on average, about 70% of the population is deficient in either one of them. D3 is kind of like how I was talking about the gut, where, you know, oh, we just thought like when I was a kid, like I grew up in this like 70s and 80s, I learned about d milk Bone.

That's all I thought it was for. And then even when I was, you know, getting my master's in nutrition and becoming an R. D. and all that, boom. Now we know D3 is a hormone and has a million purposes for metabolic health, for test host are known for immunity, you know, all kinds of things.

Vitamin D3 is part of this endocrine cascade. And then magnesium you have I think it's around 250 different chemical reactions in the body that are depend on this coenzyme, you know, taking place with it that, that needs magnesium.

And again, this is not just bone. It's going to be in blood pressure. It's going to be testosterone immunity, all kinds of brain health obviously bowel function.

So, you know, magnesium and D3 are massive and and just, the ability to relax, is going to be much easier with magnesium. I think a lot of people that have trouble, relaxing or getting a good H. R.

V getting quality sleep. It's largely because of magnesium deficiency. Okay, so all of this has been super informative. I could pick your brain forever on an ending note.

And then I have three questions to ask you about. One of the things I know you and I talked about a lot. I just get blown up with what protein do I use?

And we were talking also about how so many people have dairy issues or whey issues. Right? It it bothers their stomach. And so you were giving me a lot of good tips on how to find good vegan proteins.

And there may be something coming, listeners, where I may have a really good option for you for a for a vegan type, not vegan type, just not a way based protein, but as far as that goes, I guess Sean and I will talk about this more and we'll get back to you.

But there are other ways to get protein. You can make it from egg whites, you can make it from plant based stuff, but you can also make it from, you were telling me pumpkin seeds, different things like that.

And so there are some actual really good proteins out there that aren't necessarily vegan but don't have whey in them. And so that is something you can look for as well.

And like you said, you want something sometimes it doesn't have lectin in it is that has soy in GMO.

Protein, Favorite Foods, and Closing Thoughts

And so we are discussing this listeners, I know I'm not ignoring all of your comments. I just don't have an answer for you yet. But we may have one soon.

So I'm looking forward to more collaboration in that because I think, you know, protein is so important. I preach this all the time for myself. It's hard as well.

You know, it's 645 here. I've only had 85g of protein. So when we're done, I have to go hammer another almost 50g of protein because I don't go to bed without 135g of protein.

It's never negotiable for me. So I do like, you know, the option of of shakes and things like that. So stay tuned. We may have it back on just to talk about protein powders, because I know you guys are.

We could do one just on protein powders like creatine drinkable things for sure. So but scams and protein that I could get into for sure. Yeah. Maybe we'll just do a whole episode on that if you guys want a whole episode just on protein creatine scams, then you leave me a review, DM me on social, something like that, and we'll we'll get him back on and we'll set it up.

So I have three questions I end every podcast with I'm going to adjust yours a little bit, but one of them is what is

one food that's most beneficial and why you have to pick one food.

One food that's most beneficial. You don't have to overthink it. I get all sorts of answers, but I'm just curious from your nutraceutical brain, you know, I'm going to say, like, I really feel again is something that is underappreciated because we tend to eat the muscle.

Right? We used to eat the whole animal. We used to eat the skin. We used to eat the herbs. We used to eat the tendon, the ligament, the connective tissue.

We don't eat that anymore. We don't eat the organs anymore. We only eat the muscle. So we're missing all of the collagen. And a third of the protein in our body is collagen.

All that collar is Latin for glue. Like the connective part of all of these things. It's keeping us together. Yes, like it's important to get your high leucine, high muscle protein synthesis type of protein.

But also it's important to also have collagen. I think 20 to 40g a day actually. But if I was going to eat it, that would be even more ideal is to get organs to eat, skin to eat, the connective tissue to, you know, have jello or whatever it is to have more collagen in your diet.

Okay. If you had to pick one supplement that was most beneficial, just one, what is it and why? If I was to just pick one supplement, get one supplement, I think it is going to be, creatine monohydrate.

Okay. Yeah. And then what is one supplement or however you want to call it supplement or something like what is the one thing that you've made that you are the most excited about that just lit you up and is still your favorite person thing?

Okay. Right. Yeah, it's a metabolite of caffeine. About 60% of the population is slow metabolize caffeine, of which I am one. The sip 102 gene. It can take us days to clear caffeine after we consume it.

That's me too, by the way. Caffeine is fairly toxic in its own regard until it converts to pears and then it also converts that the filling in theobromine.

But it's actually in plants to repel insects. And, and when you get to pears and thing and when you clear out, caffeine and theobromine and just go for pears and then what we find is that you see increased Bdnf again, neuroplasticity, increased nitric oxide to the brain, increased glutathione, catalase, decreased beta amyloid plaque, improve cognitive performance and, resilience.

Decreased mental errors, improved focus, increased dopamine, acetylcholine and serotonin levels. And you don't have the bio individuality. You don't have the, habituation and adaptation effects, like habituation would be the physiologic dependance that you see with caffeine.

Adaptation would be the effect where you need more and more and more to see the same effect. You don't have any of that, pairs and things. So it's a super clean effect.

Your herbs actually improve on it, not worsen. So I love that one. Okay, here is an thing. So I'm going to try some for sure. And I'm going to report back.

But Sean Wells, thank you so much for agreeing to come on here. And I know listeners are going to love this. There were so many questions I had. I know they're going to love it, and then I'm going to put it out into the universe.

Sean and I are going to collaborate on something. We haven't figured out what it is yet, but he's going to help modern endocrine make something phenomenal.

And when he does that, we'll definitely have him back on so he can explain what we do. It's going to be called

Keshawn Labs. And, Keshawn Labs. It's a it's a gas station for John.

Got it for Sean Labs. We're going to make something for modern endocrine, and it's going to be and and so and here's what I really like about him you guys.

So he obviously he you can tell he's very passionate about what he does. He's very intelligent. But also, you know, I got introduced to him and I was talking to him about making some stuff for Modern Endocrine, and he could have just been a typical sales guy.

And then like, yeah, let me take all your money and let's make something. And what he said to me was that you need to figure out what you really want to make, what's really going to make a difference, and what you really want to put in it so that we don't mess it up.

And it cost you a lot of money, and we're not really helping people. And that's when I knew he was a stand up guy, because you could have just taken my money and said, all right, let's make something.

And so I took that to heart, and I've really been trying to find my niche this year, and I'm almost there. I've been very frustrated, but I've been doing a lot of praying, too.

And when I have it, Sean and I are going to make something phenomenal and I can't wait. I'm so excited. I can't wait. Okay, well, thank you so much for coming on.

We're going to link all your stuff in the show notes so people know where to find you. I'm sure they're going to have lots of questions. Make sure you follow him on social media.

You guys all tag him and my social he has amazing posts and he's, you know, obviously very good at what he does. Until next time next week, make sure that you're tuning in as well.

If any of this was beneficial to you, please share it with somebody. I know you have somebody who needs to know they need to take their creatine or knows about the crappy supplements they buy on Amazon.

So please make sure you share this, leave us a review, subscribe, and like our stuff and we'll see you next week. Thank you for tuning in to Doctor Talks.

We hope today's episode has enlightened and inspired you on your path to optimal health. Each day is a new opportunity to make choices that empower your wellbeing.

For more insights and strategies, subscribe to our podcast and visit our website WW di doctor Talksport.com. Stay connected, stay healthy and join us next time on Doctor Talks.

Real talks from real doctors on the issues that matter to you most.