Introduction to the Peptide Summit and DNA Company

Well hi everybody. Welcome to the Peptide Summit. My name is Doctor Matt Cook. And today I'm actually super excited to be with, Kashif Khan. And, he, runs, the DNA company.

And I think it's the top, company out there that is going to help you understand how to use, functional medicine to impact your genetics. And, and so this is going to be a super interesting, conversation to get into.

Welcome to the podcast today. The pleasure and good to be here. We're, we've been delighted to get to know you. Yeah. It's been, a challenge to try to figure out how to understand the role the genetics play.

And then how to begin to impact that. And I think you guys have done more to clarify this and break it down into bite sized pieces that people can understand than anybody else.

And so I'm grateful that, you took the effort to do that. No, thank you. That that was exactly what we saw was the gap was we have this human instruction manual that tells all of ourselves what to do, and nobody really knew what it was saying.

Like, we knew all the words and letters that were in it, but nobody was reading the story. Like, what are all these paragraphs like? What is what? What's the point of all it? Right.

And that's where, the interpretation, I would say it's the number one word, the key thing that was missing I anybody can go test for DNA, right? You can literally go buy a machine, put it in your basement and start testing tomorrow.

What does it all mean when you print out a report? That's what was missing and broken and kind of what we went towards in our research. Awesome. Can tell me give me.

And this is a peptide segment. But I think of of our philosophy is, is that we're trying to break down and introduce people to functional medicine and strategies of thinking about, the body biology and then, how can we begin to influence it, and then what factors, may impact how we need to influence and point us in a direction of where to go?

And, and that I think genetics as a, as a big, big area. Within genetics, there's two aspects to straight up genetics and then epigenetics just from the genetic piece.

Why don't you tell me a story about how your, your algorithm begins to think about genetics? Sure. So, so the gap has been and I'm sure a lot of people listening here have done some kind of genetic testing at some point.

There's a lot of companies out there doing it. I think like 80 million people have done an ancestry test. So, you know, 30% of the American population.

Why Genetic Interpretation Matters

What was missing was the context of the human body, meaning we already understand, you know, somebody comes to your clinic, for example, you're going to get to the.

Why not, what condition do you have? What pill do I offer you? But the biochemistry of. How did you get there? Yeah. How do we reverse this? How do we prevent it?

Because we truly know why it happened. Root cause medicine when genetics wasn't doing that, what it was doing was, first of all, trying to identify genetic conditions, which is really important.

You know, you're born with something someone genetics, which was turned on or off. You have it. You have that thing, something like sickle cell syndrome.

You're born with it. You have it. That's like 2 or 3% of health care, you know, 90%, at least according to the CDC, 90% of their of the $4 trillion healthcare budget is spent on chronic disease things.

You're not born with, things that happened later in life because you made the wrong choices for too long. And what are those choices? That's what we were trying to figure out, because it's not the same for all of us.

And it's not always intuitive what that choice may be. And if you make the wrong choice misaligned to your genomic capacity, that's what leads to chronic conditions versus the genetic condition where there was a switch turn off.

So the way you look at genetics isn't this gene equals diabetes, this gene equals breast cancer, this gene Nichols, etc., etc.. So because that's not the way the body works, we, you know, people like yourself know why breast cancer happens, why diabetes happens, why cholesterol even happens.

Now let's look at what genes instruct each step of that process and use the map that already exists, the human biology map. Right? Instead of trying to reinvent it, which only pigeonholes you to things that genes can inform, that are direct.

So that's the work we did. We spent three years studying 7000 people one by one, by one by one to say, there's enough science out there about DNA. We know what each gene means.

Now, why did this person who fits in the. You have an 80% chance of Alzheimer's bucket get sick? And why did this person stay in the 20% that didn't get sick?

It's the exact same genes that were telling you you have an 80% chance risk of something that I'm also telling you have a 20% chance risk of not getting that thing, whatever it is.

So what were the choices made by those two people with the exact same genetic risk where they didn't, they had a different outcome, and that's kind of what was missing.

What were those choices? What did you typically find. So the the so this is where we get into epigenetics. The thing that you mentioned and there's there's two ways to look at epigenetics to actually measure in time how your genes are expressing.

Right. Which again goes back to what I was saying before, isn't as actionable as to understand what are the environment, nutrition and lifestyle habits that got that gene to express that way.

Right. So we're we were in this habit of taking new science and then putting it into the existing context of measure your blood, you know, do stuff that's reactive in nature and disease centric as opposed to health centric.

How do I keep you healthy? And so even with epigenetics, the way we look at it is about the disease or about let's measure the expression of the gene, but not ask what caused that expression.

So what we look at is something entirely different. First, the profile you fit in this 80% bucket. There's some risk there. This propensity. Right. Then we say what are the environment, nutrition and lifestyle habits of the people in the 80% and the 20%.

And there's areas where it's not, like I said, always so straightforward. For example, cardiovascular disease, the number one killer, you would think that you follow your doctor's advice of go exercise four days a week, which means running on a treadmill or getting on your bike.

For some people, that would be the cause of their cardiovascular disease because genetically they don't deal with oxidative stress so well. So when they're getting into high cardiovascular output, they're taking in so much oxygen

creating and so much creating, so much oxidants, which is the byproduct which are toxic, that they cause inflammation.

Then you have to look at, well, what quality of hardware do they have. You know, that endothelial lining, the inner lining of the blood vessel. If it's not so good, the inflammation is going to happen a lot faster.

If it's highly resilient, maybe it won't happen at all. So this is where you can look at the pieces, answering the questions that we already understand in biochemistry as opposed to you had 80% chance of cholesterol problems.

Well, what does that really tell me? I don't know what to do with that. Right. And so then along those lines, then. And this is what's the confusing thing.

Because you have somebody that like Jim Fix that was out there running and then dies running and you know, and so you wonder if I could go back in time and study and kind of figure that stuff out the way that we begin to sort of layer upon that is then we say, okay, so if if there's an issue, we find from the endothelial perspective, we have a whole bunch of things that we're trying to do to work on.

And it's a function. Yeah. And so then and then this is just further data that's going to help us in terms of how we organize our model of applying things.

And then I think I think it's also helpful because if you see some risk in your portfolio, then it becomes a little bit easier for me to convince you to take that next level from a diet, lifestyle and wellness perspective.

Yeah, it gives you that sense of it's if somebody is not symptomatic or they're not sick, we feel invincible, right? You go to the doctor every second.

That's not the right way to deal with your health, especially when it comes to chronic disease and aging, where we're learning that now, especially to functional medicine.

But if you do a test of this nature and you understand there is a big glaring red flag, right? You're you're endothelial hardware is the worst quality, which, by the way, is not a 2 or 3% problem.

It's actually more rare to find someone with a good, resilient endothelial than it is to find bad quality, because we aren't designed for the current environment.

We live by what we've inherited ancestrally, our current DNA that's in our bodies is somewhere between 200 or 250,000 years old. So we are like people of 200 or 250,000 years ago.

We haven't shifted in what our genetic map looks like.

From DNA to Functional Medicine Storyboarding

That what we live the way we live today is a blip of like the last couple hundred years, you know, industrialization. How old is that? A few hundred years versus 240 something thousand years of what we're actually designed to do, which is why we don't have robust, high quality endothelial linings that are designed to deal with pollution and chemicals, you know, and, sort of what's lacing our food that may our enter our bloodstream and why cardiovascular disease is so prevalent.

You know, we aren't designed for those epigenetic factors. So and going back to what you said, this is why you have this crazy phenomenon of soccer players that just drop dead while they're playing Olympic sprinters who are in the best condition of their life, best doctors, best training, best of everything.

32 years old, they dropped out of a heart attack because they aren't designed for that oxidative stress level, and nobody's measuring preventively. How inflamed are you?

You're 30 years old. Why would I check your top athlete? Why would I check? Well, I can tell you, if you're five years old, your DNA doesn't change what you should be doing for training, what you should be doing for diet, what you should be doing for environmental exposure to either reduce or supplement with certain things to manage where you're at in your DNA is what the cod you been dealt. Now you know what to focus on right now.

And and ten years ago and five years ago, that was even more true because it was there was not much that could happen that could affect from a for example, for cardiovascular perspective, a young healthy athlete other than, for example, like cocaine and drugs and stuff like that that are toxic.

But now we've got Covid and it's you know, you hear more about cardiovascular stuff now with young athletes because Covid can really affect the endothelial lining.

And so then this would be an example where we get a, patient and then we're applying this algorithm. And then we we go oh okay. So oh look at that. There's a little bit more endothelial risk.

And so then now we're going to we're going to within our algorithm set up a plan of how we're going to work on that. Exactly. And then that and then now we're managing that.

And then we're thinking about inflammation and then thinking about that and then communicating that. And I find that to be fairly helpful in terms of influencing health behavior.

Oh for sure. Yeah. Because now all of a sudden it's empirical. It's not like I don't feel sick. So why are you telling me to do this stuff? Right. Which is our belief.

But there's data sitting there that you can't argue with. You have bad hardware, you don't detoxify, you can metabolize fats, and you're on a keto diet. You made the wrong choice.

You shouldn't be a vegan. As an example, there's certain enzymes required to break down chickpeas, lentils, legumes, and you don't produce them. So it's the data is in your face and hard to argue with.

And all of a sudden you make the right choices. The, that one's an interesting one. And and I'm really enjoying kind of the food conversation in a way, because that's just kind of not emotionally triggered by it.

And then I've got, vegetarians, pescatarian, paleo, carnivore, vegan. I've have everyone on my team. And so then we've created this sort of centric, accepting sort of spot that we're in, but then we're doing that test thing like my I have fairly good genetics for being able to be vegan.

Right. And so, so but I'm not. Yeah. It's, it's, it's, it's a and it's often the first place we go with people because you're going to eat anyway. Right?

It's one of the things where we're not telling you how to exercise or not telling you what supplements to take. You're already eating. You're going to do it.

So let's at least do that the right way, the way you're designed to do it. And the impact is quick, like you feel it right away if you do things right, and all of a sudden you can eat a little bit more and fuel yourself, you're all bloated.

You don't have these gut issues. There's no, you know, call it digestive type problems. The the really cool thing we did in our research when it comes to food is we understood when we were trying to help people coaching through, you know, eat like this, you should be a keto whatever.

We found that the failures were typically behavioral, not the diet itself, meaning understanding the neurochemicals of the brain and what drives your personal mood and behavior.

Your personality changes the outcome of what we're asking you to do. So do you lean on food as a coping mechanism? Are you a binge or are you an addict?

Do you graze at the pantry and you don't even realize you're doing it right? Do you feel satiety? Literally, there's a there's a gene that deals with the ability for your gut to tell your brain you're full, and some people have a slow signal, and that's why they're going for a second and third thinking that they're still hungry.

There's another gene that determines the satisfaction of the tongue and the palate. And if you're not doing well there, it's actually designed is like an, a, a survival mechanism that it drives you to, to want more variety so that you're getting the nutrition you need.

And for people that don't have variety, that is the poor version of this are constantly snacking. They're done with their meal. And now I didn't get the salty. I didn't get the crunchy, I didn't get the soup.

I need a little bit of all of it. Right. So we always first deal with the behavioral genetics. How do you actually perceive food? Are you, you know, are you more reward seeking?

Are you more flaky? Call a, you know, a naysayer, right? Then we know how to build a plan that you're actually going to stick to and that you understand and it feels correct and the outcomes are so much better.

And then, it's to the food thing to me it seems like historically and even for myself, if I went back ten years ago, it seemed like a little bit of a black box.

Yeah. I, I, I knew a lot, but I don't think I was in total control of what I was eating. Whereas like, now I'm in about 98% control. Yeah. And, and it's it's amazing.

Like the fact that I'm learning, learning how to totally overcome that. And I think part of that is having a whole bunch of conversations and getting data and going, oh, okay.

Oh, I have that. Yeah. And so then that and having that data stream in begins to kind of affect consciousness. And then I go, oh, okay. And and then somehow the, the, the amount of that and the, and the organization and the clarity of that came up more and more and more to the point that I start, like now, I, I eat like a super moderate amount, not too much, not too little.

Right? Fairly balanced. Oh, meat. Only meat or fish only once a day. And then I eat and I start to be fall. And then I feel like I. I love that feeling of being fall.

Yeah. And I just kind of relax into that. And then it's like. But I remember ten years ago I would be like, I probably would have seconds. Yeah, yeah, I think so.

What you just described is kind of the journey people need to go through. It's the challenge is when people are expecting a flip, a switch, and overnight everything's changed.

You first have to make it a priority or a habit. Like, is it does food matter first of all. Right. If you're being told today you need to shift your diet, don't expect that tomorrow you're a different person.

You've shifted your identity. It starts with even thinking about food and thinking about how do I feel? And thinking about am I bloated? And thinking about am I still hungry?

Am I satisfied? And you start to have a better relationship with those senses, right? And you start to become more aware of them and then all of a sudden, like yourself, you're just more sensitive.

You won't make that mistake. Right? And I've been through this myself of I've learned that my carb metabolize ation is the optimal. I sorry, the absolute worst.

So I can't convert carbs into, glucose, which causes me to have a crazy carb crash and bloating and all this stuff. And my insulin response is also horrible, which would almost guarantee me to have type two diabetes if I, you know, went down the car path and it would just make me feel horrible so that that good feeling that I was getting

from eating what I was supposed to eat push me towards, oh, this is how I'm supposed to feel.

But it took months of that feeling to realize I can. I am actually supposed to feel like this, right? And now when I don't feel like that, I'm so not used to feeling bad anymore that it actually feels really bad, right?

If I yeah. What I even eat. Like, for example, my kid has like a candy that somebody gave them that I couldn't control. And I take a little piece of it, the flavor of that, you know, corn sirup stuff that's going into my work that I before didn't even notice.

Now it's like, feels like poison, right? Yeah. Yeah. So it's that shift that realizing it takes time. But those those habits develop and sensorial.

Behavior, Food, and Genetic Identity

You're you're in a different place and then you're it's permanent. It's a new identity. Right. And then the this is a, this is a the genetic piece is a lifestyle conversation, like to hear you say.

And now this is going to be unusual thing to hear Kashif say that it took months for that to happen is a victory. That is a victory again. No, not a lot of times they said like, oh, I'm going to tell you something and then you would know it and then you would start applying it like tomorrow morning.

Right? But that this is a very sort of intimate sense connected thing where you're paying attention to how you feel and then being able to control that which is which is, I have a friend named, Ross.

What? He is a successful entrepreneur. Okay. Shout out to Raj and I, and he was a successful entrepreneur, an Indian entrepreneur. And his religion was that he's the Jain. All right.

Then when I came to Silicon Valley, he was the early person I met who I did yoga with, and I just 100% love him. And he said, look at every religion that has a role where they control what, food you can or can't eat.

He goes, those are the most successful people in the world. Yes, because it's very challenging. Yeah. To to be able to learn to have any control over that.

Yeah. And, and and I recognized that that was like one of the most important things that anybody had ever said to me in my life. Yeah. And so then I started trying to pay attention to that, and I realized, oh, I wasn't in 100% control.

And then it took me, honestly, ten years and Arkady or this other teacher of ours that we loved, talked about it 24 hours a day, but then that's a good one.

You know that you speak to something that I've learned genetically. I'll actually dive into the genetics of why what you just said. Right. So, and I'm a prime example of this.

So, you know, we were chatting earlier about warrior genetics, you know, before this started. So the way I'm wired is literally to be a warrior. I'm not sitting here with a sword and shield that I don't look like one.

But ancestrally, whatever my ancestors went through, a lot of stress, a lot of fighting. Constant. You know, striving for something. So what does that look like?

Is my ability to bind dopamine and experience pleasure and reward is the absolute minimum, right? My my dent, my, density of receptors is really low. They're sparse. Right.

Then the gene, which is the gene that kind of breaks the dopamine down to bring you back to normal. I have the fastest possible version, then the Comt enzyme, which deals with hormones and so many other things.

I also have the fastest. And that's what breaks up that metabolite and cleans it away. So I feel way down here and

it lasts super fast. So when it comes to pleasure and reward, it's very challenging for me, which leads to potential addiction, because I go down that pleasure route and I find the thing that gives me pleasure, or it can lead to depression because I don't find any pleasure and I just don't get this.

I don't get satisfaction from the sort of status quo or leads to achievement, because dopamine also allows you to feel reward. Right? So and that's kind of what happened to me that when I was younger, I was kind of in and out of depression, in and out of various addictions, not anything super nefarious, but just not productive.

Right. And we were also grew up in poverty. That's why the depression kept coming out. Life wasn't good then. My father died when I was 17, and I had to take care of the family.

And I became super entrepreneurial and reward thinking because I needed to. And I never shifted back to any of the other buckets. But my dopamine made me whatever I did today, tomorrow I did.

It had to be more and bigger risk and bigger reward and bigger risk. So why am I saying all this, what you just talked about and what's happening there is people that are and I've experienced this myself, this new reality.

We just talk about new identity. It used to be, even for myself, that food would give me pleasure, right? That dopamine hit the tasty pizza or the whatever you could smell or think about and plan the next meal.

It was pleasure, pleasure, pleasure, and that feeling was too good to let go. So it's hard to stop. It's very hard to stop, especially when it's in your mouth.

When you start learning to say no and you start actually enjoying that. No, because it's giving you a sense of reward. You're actually replacing the pleasure because dopamine does both.

Right? And this is what's now happened to me. What's happened to you? The gene phenomenon that he was talking about. And the gene is a very difficult diet.

Like you can't eat anything. I've a difficult time now. Yeah, it's super difficult. You literally can't even pluck a fruit. You can't pick the life of anything.

It has to be naturally just fallen from the tree or whatever. Right. So, that reward that you get from saying no and the enjoyment of that reward becomes no.

Your replacement for pleasure. But you have to create that shift. And that's why it's said it takes months of changing one habit into another habit. But that's where I'm now at that I actually enjoy saying no so much.

It gives me more reward than what the yes of eating the tasty pizza that I don't like anymore, because I know it's going to make me feel bad and I know that I got past it.

Oh wow, I did it again. I achieve something again, and now I'm on a different path of achievement as opposed to pleasure. That's what happens to people when they change their identity and change their habit.

And that's why I'm just advising people allow it to take some time. But once you're there, you're there. It's permanent, right? And then that that part, there's also then another imagine like we're having that this we're having this genetic conversation.

You have to then like then the next conversation is, functional medicine conversation. That could be microbiome. It could be an imbalance between the good and bad microbiome.

It could be like infections and parasites in the gut. People can have in, bacteria or yeast living in the small intestine. That sort of disrupts everything.

But then imagine, as a doctor, we're having this conversation that's kind of an emotional identity, genetic, spiritual

conversation. And then you're also over here having this other conversation.

Yeah. That is, infectious disease, inflammation and, microbiome sort of wellness conversation. And both are relatively complex. And there's a whole bunch of aspects going in.

And so then the next step that we try to do is begin to merge those two conversations. Yeah. So then oh okay. That food makes me feel this way or that food could drive Sibo or do I have Sibo or do I not?

Maybe I'll do some testing, but then the the the what you guys have done in terms of the way that you organize the genetic testing, that I really like it.

I feel that it helps contextualize your understanding overall of everything, and then helps to tell a story that you can tell it to yourself about yourself.

And that is a hero's journey story that is ultimately like the story that is, that has you on a trajectory of healing that, you know, it's funny you said that because we actually call it genomic storyboarding.

Oh, really? Yeah. We say that we don't provide genetic reports because reports need interpretation. It's just a bunch of data. We provide genomic storyboarding.

We take your genetic profile and we tell you the story of anxiety or weight loss or hormone problems or recovery from exercise. You know, how do you do that?

Let's look at because it's not one thing. It's it's a system or pathway. And if you're not looking at from A to Z, the whole system, then you're not telling the story.

And so using gut microbiome as an example, our belief is that gut microbiome and DNA are critical to have the personalization. You know, what is your how you're wired.

It's so your human instruction manual, here's your DNA. That's we can look at your blueprint and figure out how you're made. The other one is kind of like a stamp in time.

Here's where you're at. You know, at a very personal level. Let's look at your gut microbiome to figure out exactly what what what do we need to work on right.

So the one challenges that a lot of people that are working in these sort of buckets are taking a siloed approach. Is gut microbiome better than DNA? Is epigenetics better than gut microbiome?

What do like pick one. And then we're the best at this and you don't need the other. But the reality is like you mentioned, you know, Sibo or inflammatory issues of the gut, if you're not putting them all together, you're, again, just like what medicine does right now, the osteopath or the, you know, cardiologists or the endocrine, like it's everything is separate and siloed.

And so you're only ever dealing with symptoms because if you don't get to the system level, which requires integrating all of it, you can't get to a root cause.

You can only mask things. So, the only reason I say this is because it's people like yourself that can take these pieces from the various sort of providers of the science and create them out.

And gut microbiome biome was a perfect example. If you're doing the wrong thing and you're causing the wrong flora to flourish, and all of a sudden there's like a toxic excrement or some kind of, you know, a byproduct of that which is causing some kind of inflammatory issue.

You then also need to understand the genetics of how do you deal with that. Maybe you detox it so well that you're not noticing what you're causing yourself, and there's no symptom.

There's nothing to complain about. Maybe you, the doc said so poorly that it's a giant red flag that needs to be dealt with as an emergency before you get IBS, Crohn's, colitis and all this other stuff.

Right? So you got to sort of converge and merge all these pieces of science that we now have. But that requires a quarterback with someone like yourself in the middle to take all of it and turn it into a plan.

Right. I like that. And, or you could decide I'm going to be Tom Brady, the Tom Brady of my life. But I need a coach, you know? Yeah. Yeah, exactly. Yeah. And he's kind of doing that for himself.

He's saying I'm finding all these pieces, but they're pieces, so I'm putting them all together. Now. He has his own protocol, right, of what he believes a, I'm interested in that whole story that you said about the dopamine and reward.

So then is is because your less what was what's the logic on the low dopamine that makes a great warrior.

Warrior Genetics, Dopamine, and Reward

So it's not ending there. There's other pieces to it. I'll tell you the whole profile. Right. So that's step one is that I strive towards reward. Right.

So I'm looking for that dopamine hit if I don't go down the pleasure an addiction route, which is why you often find high achieving people become suicidal or become alcoholics, because it's the same pathway that leads to both.

Right? That. But it depends what context you put yourself in. Is it striving for a reward or striving for pleasure? Right. So one is that that I seek reward highly.

And whatever I did today is just not good enough anymore. I need to take a bigger risk and a bigger risk and a bigger. So I'm very easily able to make those crazy decisions be on the front lines and go for it without thinking.

Especially because my comp enzyme is really fast so I don't get stuck in thought for very long, which is sometimes going to be a crutch, right? Because I'll just make rash decisions and just go.

But it also allows me to make the decisions that nobody else will make. They don't have the kahuna to do it right. So it appears to be this sort of warrior mentality of, nope, we're getting it done.

I'm let's go do it right. So that's one second pathway is serotonin. And because my serotonin receptors are somewhat dysregulated, I'm a little more sensitive to stimuli than the average person.

So whether it's good or bad I notice more. So again given the context it could be I'm irritable. I get annoyed easily. I complain a lot if that's where I use it.

Or it could be that I'm super highly detail oriented and I capture everything in every little T and I that gets crossed and dotted. I notice them all right.

There's been times where we're in meetings with our team and somebody will say, no, we didn't talk about that last week. And I'll say, can you open up your notebook to the second page and look at the top line?

Exactly. Because I literally remember the guy writing it down at what time with the meeting. He wrote it down right. And it's not that I'm more intelligent.

It just my, I'm so much more sensitive to stimuli that I'm constantly capturing it. All right. So that leads to this fast decision making. But by processing a ton of detail which allows me to make good decisions, which allows me to lead and be that warrior, right.

The last part, which is probably why I'm a CEO, it's a I'm wired to do it. Right. The last part actually, there's two

more parts. So the third part is my, nor adrenaline response is also somewhat off.

So when it comes to both negative stimuli, and positive sort of pursuit of adrenaline, it's I'm a little more sensitive to it. So when it comes to that rush, that fight or flight or whatever, I feel it more and I strive towards it.

Right. I like to think of like that endurance runner that is constantly wanting to win, win, win, win, win. Right. That adrenaline is important to me and I get lost in it.

But at the same time, I also imprint trauma. More pain, grudge, you know, negative stimuli. And so I remember all the bad and all the bad feelings and what that person did to me and, you know, and I and I, and I, it means more.

So I do more about it. Right? The thing has meaning to me. I remember not only the logic, but the feeling. So I can read the room. I can kind of sense where people are at emotionally come to them at that level.

Which again, there's good and bad to this. The bad could be that I'm suffering from PTSD and trauma. The good can be. I'm using it towards my goal. All of this comes down to context, right?

The last of it is brain drive, neurotrophic factor. I have kind of optimal, version of it. So it's very easy for me to develop new neural pathways and neural connections.

So the clinical of it is that I would recover from a concussion quickly. But the mood and behavior of it is that I appear to sort of not have, neurotic or drama, clean response.

Quite the opposite. Or give me the worst and I just deal with it. It's not a weight on my shoulders. Right. Lawyer letter shows up in the mail. I enjoy coming up with a strategy on how to deal with and not.

I can't think or eat for the rest of the day, which is a typical response. Right? So I strive for a reward in that path. I'm seeing all these detail nuances in my quick decision making and making good decisions quickly, which allows me to lead.

I have a sense of feeling. Right. So I remember the mission, the feeling of why we're doing this. Because there's some emotion to stuff, and it's very easy for me to sort of learn new skills, process information, at a level where it's not a weight on my shoulders.

It doesn't mean a lot. It's more like, let's get it done. So that speaks to a warrior, right? Our co-founder is the flip opposite of me, and we call him a warrior.

Right? He has a maximum dopamine expression, the slowest clumped enzyme. So he gets stuck in things. He's like constantly bingeing. You know, where I need to like, get it done, get it done, get it done.

He's like, yeah, let's do it. And then he goes right back to his laptop to play video games. Right? But I can never dive deep the way he can. Right. Give him a project on you know the I'm not the scientist in the company.

I'm the CEO. I'm the guy that pushes things along. He's the guy that creates amazing stuff. But I call it the artist. He's the guy that will dive deep, come back with a stack of paper like this.

But the other eight things, he's not interested. He never even starts. Right. So it leads to different outcomes. And if you understand this about yourself, imagine how much more impactful you know, you're getting to your outcomes as knowing why you feel a certain way or I didn't get it done or I overdid it or it's all wired up here all driven by DNA.

Perfect. So then, how then I'll take that one. Is this that then imagine. So we're talking at a peptide summit. So then now imagine I'm working with you and we've got this warrior gene kind of kind of character that I have as I'm, there's, aspects of metabolism and, and, and stuff like that that we're talking about.

There's aspects of neurology, how you think about and kind of process trauma. Yeah. And so then we would have

an example of that warrior. We take care of a lot of warriors.

Who come back from war, you know, and we're still fighting in the same places for the last thousand years or 5000 years. Crazy. But, and and so then interestingly, then as we have our conversations, like, are they stuck in fight or flight or are they balance, right, the vagus nerve not optimally working because of some combination of stuff in the gut and choices that are being made?

Plus maybe some infections plus neurologically what's what's happening on it from a dopamine and a reward perspective for serotonin. And so then I I'm sort of love the the genetic storyboarding conversation because that becomes, thematic idea that is somewhat artistic, but it's super scientific at the same time.

Right? It contextualizes the whole story. And that it can begin to give you some impact, an understanding of how you feel in your gut, how you feel in your brain, why you might be paying a little bit more attention to other people on these.

And then if you're paying more attention, but you can tell yourself a story, oh, I'm a person that pays attention and I do that, then that becomes an enjoyable thing.

And then you can reference it. And then people recognize that you're paying attention and then they can connect. Whereas if you're just sort of paying attention, but like without the content of why that might be, it might seem like neurotic behavior.

Right. And and so then and then we'll do things like vagus nerve or dissection will, you know, for people with infections we'll use immune peptides like thymus and off of one or I'll, I'll 37.

We might use mitochondrial peptides or supplements that work on mitochondria and strategies sort of to detox the body. And so then suddenly we're we're designing an overall approach that's going to help you contextualize both within the your role as an identity of a human being, with your identity as your job, with your and your identity, as, of of how all of your organs are, are doing things and how they make you feel and how your biology makes you feel.

That's then it's all impacted by genetics. Yeah. That's the way you laid it out is perfect that that's exactly what clinicians should be doing. I mean a lot of people don't have access to the knowledge or training that you do.

But it's you know, it starts with who are you? Where are you at? What are the red flags? How do I actually intervene without trial and error? With L, one size fits all right.

What does this person actually need then? What are the best tools. And you've you've curated that right when it comes to peptides which is kind of new and emerging.

And I would argue that most clinicians, if you talk to them don't know where to start. Right. Like maybe don't even know, can't even tell you what the definition of the word peptide is. Right?

So and then all of a sudden, if you have these tools curated that are so targeted, you know what to use. You know what, you know how to solve the problem.

I have an anxiety issue. What does that mean? Do you need to get on a pill? Is it a hormone thing? You know, is it a neurochemical thing? Is it a gut brain thing?

Then you know what to target and you're resolving the root cause, and you don't need to be labeled as an anxiety patient. That's on a pill.

Integrating Genetics with Gut and Immune Health

Oh, tell us from so who has anxiety like the whole world, you know, tell us how how, you think about anxiety from a genetics perspective. I'll give you a very specific example, which is actually the reason why we went from being a

research company to like out there with the public commercially, because this was the epiphany, were within my own family that was like, wow, everybody needs us, right?

We were a research company, were studying DNA. We were interpreting plugging into other healthcare companies to help them do a better job. We weren't out there trying to work with people.

So my niece, she this is now going back to, winter 2020. She my mom, my niece, my sister and my mother live together and this is, again, a genomic storyboard because it's not one thing.

It's multiple systems interacting that leads to an outcome. Right. So she, had an anxiety attack at the age of 13, right? So, I got a call from my mom. It was October 2020.

And she said, we need your help. Called. You know what pediatrician to call? Would we call? So I went over there. It's not far from my office, and she was having trouble breathing, but she had kind of recovered from what they saw.

The worst of it, which you like, fell over, couldn't breathe. So anyways, I call my pediatrician friend. He said it sounds like a classic anxiety attack. If it happens again, let me know.

I'll help you out because he had somewhat gotten better. So some time goes by. My mother calls me again and says, you need to get over here because it happened again.

But this time she fell over and she hurt herself. You can't walk. So I called my pediatrician friends. I said, can you please get the urgent care, like, ready to, like, check us in.

So she's not waiting because she's in a lot of pain, so no problem. We get there, we spent a good six, seven hours there. And this is Canadian health care.

It's free, but you got to wait, right? So after this 6 or 7 hours, there was blood tests. There was a scan on her leg to check if you. She fractured it.

And there was a bunch of questions. Us. And the answer was, if it happens again, let us know. And I realized at that time that meant that if it happens again, she's being labeled as she has anxiety.

And we're going to tell you what pill she has to take. Right. That's when I jumped in and said, I have her DNA. We we did it for diet, nutrition, for the whole family.

Right. So let me look. I didn't look, I went back to work. Some time goes by, my mom calls me and says, your niece is gone. I don't know where she is. I said, what?

What do you mean? She's like a sweet, innocent girl. You would. It is completely out of character or what? She said she's run away. She's gone. So that makes no sense for her.

So I drove over there. They're in an apartment building and my niece is standing outside, like at the lobby, like not knowing where to go, because for her, that's far enough. Right?

So I asked her what is going on. It's like a social media thing. Bullying like a boy thing. Like, what is it? She said, I don't know, I just need to get out of there.

And I understood she was running away from like the feeling she. There was nothing causing it, not nothing to complain about. It was just that feeling of being there.

She had to leave and go outside. That's when I literally, at that moment, opened up her genetics and remembered that I didn't do it earlier. And I asked my mom, wait a second, you've been calling me like clockwork monthly.

Can you tell me about her menstrual cycle? So you know what? Now that you mention it, it just started each time,

right? So what do we know about the circadian rhythm?

The menstrual cycle is the beginning. Is your lowest level of hormones. Right. Slim to none because you just finished clearing them. Right. So she was already low.

She was also what we call androgen dominant. So a lot less estrogen and more testosterone. So she was going even lower. This is a giant valley. This as opposed to like a speed bump right.

So that was one I said this must this is something to do with it. Because when I look back on the text messages and calls, like chronologically, they were happening like clockwork monthly.

So again, it happened now. So why not before? Because this wasn't the first month of our menstrual cycle. So then I realized because of Covid fall 2020, she was being homeschooled.

Everything was closed in in winter in Toronto. So she was getting zero vitamin D, literally zero. So I looked up her vitamin D pathway. And vitamin D isn't as simple as let me give you a blood test and see how much there's in the blood.

That's step one. There's one gene that does it. Let's take B and put it into the blood. There's another gene that transports it to the cell where it's actually used.

She had the slowest version of that. There's another gene that binds it when you get it to the cell. She had this the worst version of that. This is the only micronutrient that's so complex.

Because if you have too much, it's toxic, right? Everything else, you just kind of p out or stored fat, whatever. And so she had this horrible vitamin D profile and she wasn't getting enough.

So this combination of hormones or something, Nando's was already a propensity towards mood and behavior issues at that time. Zero vitamin D of the 22,000 genes in your body, 2000 require vitamin D to function.

10% of the human body of biochemistry is dependent on this one thing. And she didn't have any. Right? So now the system's all whacked out. So why then, did it lead to an anxiety issue?

So we're already know systems like under a lot of pressure. But why here? Like her uncle, she's wired as a warrior. Same genetics. She has no dopamine.

Right. So hormone change, which was already happening. Now the extra load of the zero vitamin D was like kind of exaggerating that hormonal rollercoaster.

And now this sort of cellular, this system failure body wide led to that low dopamine taking you over the edge of I have a crazy anxiety issue. The world sucks and it will literally lead to breathing, panting.

Something probably triggered it each time, but it happened on that day of each month. So now her outcome would have been, and you think about so many young girls that anxiety, depression, and they talk about this stuff and they end up on a pill very common today, the day we figure that out.

She has not had this problem sets. It is not repeated once because all we did was booster dopamine levels with l-theanine a simple supplement you can buy anywhere, right?

We high dose vitamin D, regimen for her, which was, five days before her cycle started. She was on 10,000 IU and it was split because she can't transport it fast enough.

So she was taking 3000 IU three times. Right. So and getting her 9 to 10,000. And so right before the cycle 10,000. First peak of the cycle 5000. And then a maintenance dose of 2500.

Those who things she has not had the issue once since then. That's all that was missing. So you understand the storyboard. You understand the dynamics of not that vitamin D causes anxiety.

Hormones cause anxiety. It's like we need to see what systems are failing that lead to different spokes. Right? This central hub leads to problems. The problem is not rooted in you have an anxiety gene, right? There's many, many ways you can get there.

And I can speak to ten other ways why anxiety happens. Right. This is just one of them. There's many reasons why it happens, all of which we can resolve at the root cause level.

Right. Anxiety is a and this is an interesting thing. Anxiety is a symptom. It's just a symptom. And so treating a symptom is like the worst strategy. Yes.

Because that is not treating the cause. This is and in what I do, I take care of a lot of patients with pain. Treating pain is a terrible idea. With pain medication because then that doesn't do anything to treat the cause of the pain.

And so then what happens is, is you just get used to that. The the treatment of that symptom. Yeah. Anxiety. Also, is the same thing. And then if you're the type of person that has a situation like she has and then you treat that with a benzodiazepine, then what happens is those patients become very dependent on that benzodiazepine.

Anxiety, Hormones, and the Vitamin D Story

And I have probably talked to a thousand patients in my life that basically told me the worst thing that ever happened to them in their life was when, they had an experience basically like your niece had.

And then they went to see a doctor, and that doctor put them on a benzodiazepine. Yeah. And then basically, they never got off. And I ran into those people at, you know, 20 years after.

Yeah. And we have some pretty good strategies to help them get off of it. But, I credit you. You're you're a CEO and a, a healer because that was, very, very good thinking.

That was me. That's an amazing story. I love that story. Yeah. And that was literally the day, you know, that we said that, like, every young girl, every woman like, that was, by the way, the area that we found is needs the most work is female hormone health.

Yeah. Of the thousands of people that we worked with in research, the area that just straight out sucks the most is female hormone health because it's just taken for granted.

You're supposed to have problems with your hormones. Women have hormone problems. That's part of life. Infertility, crazy menopause, PMS, all this stuff fibromyalgia, PCOS.

It's so black and white if you understand genetic genetically. So that hormone cascade and knowing why these things happen it's very very clear. But again we're not looking at the genetics of hormones.

We're looking at fibromyalgia and infertility and trying to resolve all these little, you know, spokes, like I said, as opposed to the central hub. So that's a big area of focus for us, because the delta value between where it's at and where could be such a big gap.

So we spent a lot of time there. What would be like a female hormone health, maybe one of the top couple things that you see that from a storyboard perspective that you could share with us?

I would say that, the estrogen toxicity being the root of so many things and never being treated as a problem, right, that the thing ends up being the problem as opposed to the root.

There's so many issues, you know, breast cancer is a big one that we deal with. We have an investor, one of our

early stage investors where we did their whole family, you know, and we had said that it seems like your wife, based on her age, is very high risk of breast cancer.

And there's things that we can do to prevent it. So they went to their doctor, to verify this, obviously. And the doctor ran a genetic test on them, another test that he wanted to do.

And they said, there's no risk. These guys don't know what they're talking about. So I said, what are they doing? They said, well, they'd try to break a gene.

And she has the good version. There's no problem. Right. So so yeah. Which is there's some truth there, but the wrong truth. What is the bracket gene do.

The bracket gene is a tumor suppressor. It goes and fixes things. It fixes broken DNA repair stuff. So if you had a bad version you don't repair stuff.

Well, you don't suppress tumors. Well, but nowhere in there are you getting an answer as to why did the tumor happen in the first place. Right. So the reason we thought she had risk, we didn't even look at bracket.

That's genetics. This gene equals this. This gene equals this. We don't do that. We look at storyboarding functional genomics right. So what we looked at and why we got the red flag was that she is estrogen dominant.

So in that hormone cascade she just nets out a lot more estrogen than the average woman. Big pool of estrogen right. So you could progesterone that is all strong to estrogen.

It's all converting desperate this big bucket every month she was also estrogen toxic which meant that that bucket of estrogen all got converted into a toxic metabolite as opposed to a clean one, which you have.

There's three potential options, right? One is clean, two are toxic. So she was toxic. She also didn't have the right detox genes. So just like me, her comt I'm sorry.

The opposite me sorry. Actually they are compos low so that it also works on hormones. So that that toxic stuff stayed there for too long. And her glutathione and oxidation pathways are also horrible.

So none of the detox pathways were working right? Estrogen dominant, estrogen toxic. Can't get rid of it. Even then, this doesn't equal the disease, right?

This equals more risk. Why at that age, where are we saying that she may have a problem? Because once you get into menopause, you no longer have a menstrual cycle to clear all this stuff.

So your body, to protect your organs will go stored in fat. And where do women have fat? In the breast, which is. And you wonder why so much breast cancer happens at the menopause age.

Not all of it, but a lot of it happens at that time. So even then, it doesn't mean breast cancer. There still has to be the epigenetic factor we talked about, which is what was your environment, nutrition and lifestyle?

What did you do with these cards you've been dealt? What was she doing? Like your Jane friend? She was a Hindu sect and her primary protein source was tofu.

So she was eating an estrogen dominant food daily, right? She was also using a lot of chemicals and, and stuff that were what we call hormone disruptors, which I'm sure you deal with a lot.

But things that mimic estrogen as they enter your body, something as simple as a Teflon coated frying pan mimics estrogen when you use it. The chemicals that are required to make it right.

So then all of a sudden, she had their bad profile. She was at the age for which she was now at risk. Because you

doesn't clearance what's going to get stored in fat.

And she had the wrong epigenetic choices to fuel that estrogen fire. And then cause even more estrogen toxicity. That's why we said this looks like breast cancer.

You got to change your habits. The answer she got was you got the good bracket. You no worry about it. Right? This is the point. Now that cancer is there, that's when Braska gets to work to go fight the cancer.

So yes, once you have breast cancer, you may not do as well fighting it because you have the bad bracket gene. But what is the answer to bracket? Go cut a piece of yourself off.

Right. Go get a secondary prevention. Go get him. That's what is told to people as opposed to why did the cancer happen in the first place? Nobody answer.

Why would you go to most cancer research websites? They'll actually say, we don't know why. We know what. We know what it is. We're working on treatment, but we don't know why.

We're not even trying to figure it out. Right. So it's another example and just easy tweaks. What is it? So what are the genetic tweaks for everything.

It's either reduce load, get rid of that epigenetic choice, environmental issue lifestyle. That would be something you can't handle or increase capacity supplement peptide.

Some other thing that makes you do this thing better that you don't do well. Right. Those are really your two options if you do a little bit of both, if you get up in the middle and you shouldn't have the problem, or if you have it, you can potentially reverse it, that's a would be a good example.

So then in functional medicine we have all of these different tests. And so then one thing that we will do is we'll do a 24 hour urine. Right. There's these different tests.

There's a test called the Dutch test. And then what we'll be able to do is we'll be able to look at those estrogen metabolites, and we'll see how your breaking those down.

They call it the good, the bad and the ugly. It's like an old Western right. You know, the old Westerns in a way probably are probably emblematic and reminiscent, probably similar to like, how it was and the old days with Genghis Khan running around, and it's the same concepts, but the, so then we will begin to look at those, we'll begin to look at estrogen dominance and then basically paint a functional medicine storyboard about the the hormone, sorry.

And then superimpose this on top of that. And, and then, and then as we look at that, then like just like you said, what is happening right now, we're exposed to more toxins than we've than we've ever remotely even been exposed to.

And we we are our genetics having evolved to be ready for that. And so we may have all of those problems and no glutathione and so and to say, okay, maybe we'll give you a glutathione IB, maybe we'll take some glutathione supplements.

Maybe you need a little bit of support in terms of detox. From a peptide perspective, sometimes we'll notice that, mitochondrial peptides will help people detox better.

Right. So sometimes by a regulator, peptides will help people detox better is pretty interesting. And so then suddenly just those little influences and and then having the architecture of this whole conversation in the back of your mind can help you organize your thoughts, and choices in terms of lifestyle once again, because and and, you know, and and it's not just the lifestyle, diet, food, nutrition, it's lifestyle in terms of your menstrual cycle.

It's lifestyle in terms of, of of everything, everything you do. How do you sleep, you know, how do you exercise? It's all impacting your outcomes. Okay.

I mean, there's there's a ton of gurus out there talking about everything there. All right? All of these things matter. I'm the sleep doctor. I'm the muscle doctor.

I'm the, you know, every one of them has a point to make, and you just you have to be cognizant of all. First of all, how what are you designed to do, you know, what are you capable of.

And then all of these thoughts that everyone's talking about, they're all real threats, right? We're we're not designed for the reality. We live in the way we sleep, the way we eat, what we're exposed to something as simple as going golfing, which seems so healthy and pleasurable.

How many toxins to take to make that golf course look so beautiful the way it does? Oh my God. And you're breathing it for four hours at a time, which you weren't designed for that, right?

You weren't never exposed to the grass of our ancestors did not have it. Didn't it didn't look like that because the chemicals weren't used to make it look like that. Right.

So you have to start to be cognizant. This goes back to the very first thing we said of starting to make those little habits that change the way you think, that change the way you behave.

Right? Because knowing is one thing. Doing something about it. Right? That's that's your behavior change. Implementing little things. And you start to now make it like a constant for yourself.

And you are aware of chemicals and you're like, well, I smell something here. It's an industrial facility. I don't want to be breathing this stuff in.

I'm going to wait outside and things you wouldn't have thought about before, right? 100%.

Female Hormone Health and Breast Cancer Risk

How do you break down from, genetics, storyboard perspective, sleep. Yeah, Sleep's a really cool one because we landed on it completely unintentionally, so we didn't think.

And again, we were a victim of our of our own industry where we didn't believe genetics had anything to do with sleep. Right. If you if you ask a geneticist, there's no sleep gene.

Right. So the funny thing is that in our research, one of the number one things people told us was the outcome was, wow, I'm sleeping. Amazing. You know, once we dove into their genetics and we fixed whatever needed fixing, the way we look at things is it's kind of like when you go to the Chinese herbalist and they take your pulse on your wrist, they don't even ask you what's wrong, right?

They just take your pulse and like, I don't need to talk to you. I'm going to give you what I know your body needs because they don't care what the symptom is.

They care what kidney or what organ is failing. And I need to support that. Right. So it's same thing genetically. We're not so concerned with the problems.

We're concerned of what gaps and holes we see in the genes. And if we support those, you become the optimal version of yourself and everything kind of goes away. Right.

So in sleep, this also also happened completely unintentionally. And what do we find that there's people that can't fall asleep. There's people that fall asleep but can't stay asleep.

And there's people that sleep the night but wake up feeling like garbage. Didn't get good quality sleep right? So the first one, the second one was actually the most common.

But people all believe they're in the first bucket. I can't fall asleep. That one is circadian rhythm. So there's a gene literally called clock, which determines your relationship with your circadian rhythm of time, day and night.

Bdnf brain derived neurotrophic factor, which we already talked about, which develops your neural pathways, also is highly implicit when it comes to a circadian rhythm and that clock.

So if you're not doing well there and you have the wrong habits, right, that aren't aligned to you producing the right amount of PDF, then your circadian rhythm is horrible and your body doesn't know when to fall asleep.

And it's the stimulation of blue light or the stimulation of stress or things that other people can sleep 20 minutes after that. You can't write that scrolling on your Instagram, on your phone, or whatever you're doing wrong, may cause you to need another hour than to fall asleep for the time you put your phone down and you're saying, I can't fall asleep?

I can't fall asleep. No, you did things that are triggering, or, sorry, preventing melatonin production. You're not doing the things that your ancestors did, which was amber light, candle light, fire.

You know, a dim, there's no pop lights in a castle, right? So you're not doing the things that you're designed to do to trigger to your body. It's nighttime because your circadian rhythm sucks.

So you need to do that. So that's one. The second one is I sleep, but I can't stay asleep. That actually has to do with serotonin. So melatonin is your go to sleep chemical.

That's what knocks you out. The people that can't stay asleep, they'll often have no problem with that first part of the night. They'll sleep deep. Great.

They have nice dreams. Then they kind of wake up. All of us wake up. We sleep in cycles, right? So all of us wake up after that first cycle. They have a challenge going back to sleep, where some of us don't even know.

We wake up. Some of us get up, go to the washroom, go back to sleep. These people kind of get up. And then the second half of that night is now nowhere near the same quality as the first half.

So what's happening there is melatonin is your go to sleep chemical. Serotonin is your wake up chemical. And like I said about myself, if you're dysregulated for serotonin, you're much more sensitive to stimuli.

So the first sort of ray of sunlight is what's meant to trigger to your body. It's time to produce serotonin. It's time to wake up, meaning stimulus. So now any stimulus does this to the person that's Ultrasensitive hubby pulls on a blanket. There's a weird smell.

Somebody walk down the stairs and there's a creeping noise. If it happens in the second half of the night where your body's waiting for the stimulus and you're hypersensitive, it doesn't know that that was the wrong stimulus, and it starts to wake you up, and then you're struggling in between trying to sleep and serotonin is trying to sleep and waking up, and the quality of just isn't there.

So there are things you can do about it, right? There's very simple things you can do. First of all, creating the lack of stimulus, you know, block out no temperature problems.

You know, maybe a separate blanket, you got to do the right stuff. But then there's also supplements. You take the third one, which is and by the way, any one of these we can talk an hour about just on its own.

But I'm trying to go like high level right. The third one if I sleep through the night. But I feel up, I feel like not so rested when I wake up typically has to do with an environmental and chemical response or metabolic response.

So sleep is when your, your glutathione on and all these processes are firing. But that detox stuff happens in your sleep right. It's happening all day but the bulk of it happens in your sleep.

So if you are again North American lifestyle, I sleep on a memory foam mattress because it's nice and it forms my body and the contours are nice. Well, it's also made of toxic chemicals, and every time you roll over, you're popping little bubbles and off gassing chemicals.

Right? Or I have a nice pillow that contours my neck. And guess what? It's made of a foam that's really toxic. Or my cleaner just showed up today and sprayed my whole room down.

And I'm breathing this stuff all the time. Where your body is supposed to be resting and recovering, you're adding an additional load of toxins and it's struggling so much you haven't recovered.

So what you were supposed to do from your exposure the day before, you've added another 20 or 30% load, which you're not capable of handling, and all of a sudden you're struggling to get that quality sleep or you need it more because of that load.

Right? Metabolic is another problem. Some people, their metabolic rate just isn't the same. Or the way they deal with carbs or fats or vegan food. The things we're talking about.

And if you're eating late into the night with so many of us, do, and you're not allowing your body to sort of reset metabolically, that's another thing.

We'll give you poor quality sleep. And we know genetically who those people are. They can sleep till midnight. I'm sorry, eat till midnight and have no problem sleeping.

And some people eat till 9 p.m. and they they struggle, right? So again, knowing where your risks are and then knowing what to do about it, those sort of epigenetic factors.

So these are sort of the three big buckets that we see. And for that bucket that is the most common one just to save, save me from email questions. So, so when I so I got somebody who says they're in that second bucket, and if they hear something or wake up then and they've got the serotonin issue and they can't, they can't fall back to sleep.

Yeah. What have you found helpful for that group in terms of, it, interventions other than blackout the room and do all the obvious things. So, you know, so I would say the number one thing going back to the blackout things, I just point out one thing temperature is probably the most important that people struggle with that they don't realize.

So something as simple as a mattress cooler, of which there's plenty of companies that do that now. Chilly sleep is a great one. You're probably familiar with them.

That is an awesome thing that will get you into deep, high quality sleep and prevent you from waking up, because it's probably the number one reason, other than light what you can deal with, get a mask or whatever.

It's the number one reason why people struggle. Staying asleep. It's temperature, right? You need that. Perfect. You need your heavy blanket for that sensorial weight because your serotonin is screwed up.

But you also not you don't. You also don't want to overheat. So you need to cool from underneath. It would completely change your sleep. But going to supplements.

So the gene for serotonin is called five LPA. There's supplements which you're familiar with called five ATP right. Which is a serotonin regulator. So if you take that at the right time, depending on how screwed up you are, like if you're like me, you probably need more and a little later, right?

That's something that helps you sort of balance your Sirt1 levels, right? We actually make our products. What's

funny thing is, in the middle of our office, we built a compounding pharmacy to experiment with all these various nutraceutical products to see how we can manage gene expression.

So it's not I can fall asleep. Give me some melatonin. Your standard supplements. There's a very specific reason, like we just detailed, that I can fall asleep.

Sleep Genetics and Practical Interventions

So how do we deal with that at the genetic level. So we actually built a product that we call sleep optimizer that the ingredients in it aren't about knocking you out.

They're about getting you into a deep, high quality sleep where when you're there, you're beyond the point where you do. You notice the stimuli, right?

You're so deep asleep to the stimuli. And I use it regularly. And I find, like, I'm having these dreams, like I'm watching a movie at night. Like, it's like an Imax theater.

You know, it's pretty crazy. I don't take it every day. But I do take it once in a while. So there's things you could do, and there's other products like that quality that makes it awesome. Sleep product. There's.

There's a lot of people out there. You want to take something that's not about knocking you out. It's about it's usually something you're taking around.

Dinner time that prepares your brain to get into deep sleep, as opposed to as opposed to putting you to sleep. Right. That's a home run. That's and a couple things on the the peptide front that are sort of interesting.

The pineal gland is, is sort of the source of a lot of our circadian rhythms. And so then there's a peptide called pineal gland. From the pineal gland, there's another one called Dev Patel on, and there are even oral versions of these.

These are small peptides, but these are called bio regulator peptides. Right. And people can take these were like keen to sort of micro dose these at like a milligram a day.

And so then like five days a week. And so then that's a micro dose of those. And often we'll take it with message again, which is the bio regulator for blood vessels.

And then cardiogenic which is the blood vessels for the cortex. And then we'll find people will sleep well with that. Some people that we need to rebuild our circadian architecture.

Then at a, at a higher level, traditionally there had been a higher dose of Apatow line where people would take ten milligrams a day for ten days and do that twice a year, and then I will have some people who can't sleep.

Nothing is work. Supplements never have work, and I'll have them do that as a ten day cycle, and then I'll cycle them down to one milligram a day, and then we'll then we'll combine then nutraceuticals and supplements and, and sort of a sleep hygiene algorithm and try to put together a comprehensive story that's going to help them as they sort of design their, their life from a sleep perspective.

Yeah, that's really cool because you're coming in with this kind of acute response and solving the problem. But you get into this maintenance phase where, you know, it's kind of like, aligned with whoever they are.

And you just they need that little bit of support. Right? Right. Yeah. Yeah, that's really cool. Yeah. Super interesting final question for you. Just I think any time I ask and have a conversation about genetics, I just need to say and I should maybe I said this at the beginning, but now I'll say, what is methylation?

Okay. So the yeah, it's a it's it's honestly that when you talk about genetics from the functional medicine

perspective, everyone talks about me for. Right. That one gene.

That's that's the sort of starring character in this methylation process. It's a it's phase two detox. It's another layer of detox. There's certain, toxins that are either not or are water soluble, and they need a methyl group attached to them.

So methylation is literally the process of sending a methyl group. So there's genes that do that to attach to this thing to allow you to be able to clear it.

And its primary outcome is reducing inflammation. Right. So if you think of an outcome based let's call it an anti-inflammatory response, what is it actually doing sending a methyl group to attach to something to get rid of it.

Because it can't your body can't get rid of it on its own. So it's it's a key metric for inflammation. The, the sort of nuanced problem that we don't do, don't look at it properly.

Is this MT fa gene, which I'm sure a lot of listeners were of 30 or I have the MT gene. It's one of 6 or 7 things going on in that methylation process.

Right. It's it's the most, it's the most studied of the genes in terms of what exactly it does. And it has that snip or that spelling mistake that we're all looking for.

And that's why you see it as this siloed individual thing in reports. But if you don't understand, again, the whole pathway, the whole storyboard of step A to Z, what does methylation actually look like?

I can tell you you are the best teacher for, but you still do have crazy inflammation. I can tell you you're the worst. I'm teacher far and you're an inflammation superstar because everything else is either good or bad, right?

So you need to understand the full storyboard and pathway. And that's where a lot of tests get it wrong. Yeah.

Methylation and Closing Thoughts

Well at bio reset we use we're exclusively using your algorithm and I think I, I wanted to interview you because I think as as we build, as we take a look at all the silos that we have been in, I think the genetics piece is probably one of the most important silos.

And, and then being able to correlate that with everything mentally, emotionally, spiritually, biochemically, physiologically, and, help to tell a story about your health.

I found it to be extremely helpful for people, it empowers them to make the changes that, we need to make to, take our health to the highest possible level.

And, and I think that, it's it's doable and achievable and easier than, I thought. And so I'm grateful that, you, are a warrior and, had the, the had the, the tenacity to, to be able to figure it out and pull it all off.

And you did it. So congratulations. Oh thank you. That was. And that that was the key word you use is we wanted to make it easy that was missing from genetics.

And you get a stack of paper, a bunch of gibberish that nobody can even understand. Even your doctor doesn't know what it means. So our whole goal was make it easy.

And that's where we feel like we have something to offer. So thank you for sort of appreciating what we do. Yeah. And then I'm going to have you come on our podcast, and then we're going to start to pick apart, one by one, a handful of these topics like anxiety and sleep and hypertension and diabetes and and break the we'll do a little series where we break down some of these common things and, and, begin to unpack them and see, see what are some of the, the, the pieces, at a genetic level that are influencing, there's this important, things that impact society

and health so much.

Sure. Look forward. It sounds good. Okay. Hey, I'm I'm delighted to to know you and talk to you. Thank you so much. Thank you. Was a pleasure.