Introduction and Guest Background

Welcome. Good afternoon, and, glad to have you all with us again for another edition of Mycotoxins and Chronic Illness 2.0. Today it's my pleasure to have Kashif Khan, who is CEO of the DNA company, and, he's going to talk to us about how to use, the information we can glean from looking at our DNA to, help make a more, I'd say step wise and appropriate, response to chronic illness.

So, just welcome because she's. And to tell me first off is just, you told me that when we were talking that you're not, you know, not a doctor and not a scientist, but, this is your passion.

So, how did you wind up here? Yeah. So, I mean, like most. First of all, thanks for having me. It's a pleasure to be here. Like most sort of functional medicine type stories, you often hear that the people that purvey sort of the best solutions started by healing themselves.

Right? And that's how you get there. Because you have to be failed by something to look for something else. And that's often where it starts. And I was no different.

You know, I ran a marketing company where I helped startup companies grow. I'm in Toronto, Ontario, in Canada. We have a lot of business happening here.

And so I was thriving in my business, but I was sick as hell, like, really bad shape. My business partner would have to drive me home because I'd have debilitating migraines.

I couldn't function, I had eczema to the point where I couldn't open my left eye like it was literally sealed shut. My psoriasis was so bad that what I would like bend my hands.

Like we'd be bleeding from my knuckles. And there was more depression. Lots of stuff. And it all just kept stacking and stacking. And you treated as you're told that there's a cream for this, a pill for this, a doctor for this.

And they're all separate. And it felt like all I was doing was maintaining a plateau, you know, of the threshold of pain that I could tolerate for each one.

And that was the check mark of success, right? I now have these things. That's my identity. You are an exhibit patient. You have psoriasis. You have it. Right.

So I started to wonder, like, why now? I'm 42 now, by the way. I don't have any of these problems now. I've been healthy for years. I don't even get sick. Really anymore.

Why did it all happen at the same time? When I was in my late 30s? Yeah. And what I learned was somebody said maybe it's genetic. I said, what does that mean? Maybe it's genetic.

So I took a DNA test and it was completely underwhelming and failed me. It's just, you know, 80% chance of Alzheimer's, 30% chance of prostate cancer.

What does that really telling me? Aren't you also telling me that I have a 20% chance of not getting Alzheimer's? So what's the what's the difference?

You're taking the most personal thing I have and really not mining it for me properly. So I thought there's got to be a better answer here. So I looked and I looked at I looked and I found the scientists that were interpreting genomics functionally the same way that functional medicine.

Doctors are not asking what condition you have, but why do you have it like the root cause, right? And if we resolve that all the symptoms go away, all these spokes that point to the central hub. So I did that for myself.

I healed myself by understanding genome genomically what I was lacking, and the most important part, why my environment, nutrition and lifestyle choices were not for me.

And I'll end with that. In terms of answering your question. Yeah, my business partner used to drive me home. Didn't have the migraines, didn't have the eczema.

I didn't have all these problems. In the basement of our building, there was a manufacturing company that was pumping toxins into the airstream. So month after month, after breathing that in, I ended up with all these problems. Why?

Because I was missing key detox genes, right? About what version? I didn't even have them. My business partner was doing really well there genetically.

So there's one thing to understand genetically where you're at, there's a whole other thing to now put that in the right or wrong context, which will change your result.

And that's what I discovered. I walked away from my business.

Genetic Testing and Root-Cause Healing

I literally handed the keys to my business partner. I said I got something I got to work on, and I haven't looked back since. We built a team of amazing scientists and clinicians, and we help people all over the world.

So, that is amazing. I love, I love the a, the, the, the success and the but but the the tenacity to to do the work, you know, because it's very frustrating when you, when, when you, you know, when your life starts becoming more and more disrupted and you know, and you're just not getting answers.

But you're right, I, I think I learned over the years, I would say, at least half of the new of the new therapies and new ways of thinking that I learn are from my patients because they work hard at uncovering what, the medical literature hides.

Yeah. And your knowledge is limited by the amount of time you can research and you can't possibly know everything. Right? All you'd be doing is studying.

And the person that has a problem is going to specifically look for the solution for that. And they're going to drilling deep into that world, and they're going to come back with nuances that you don't get at the generalized level. Right.

That's where healing is found. Yeah. That's right. And, you know, and that's a a lesson for I think every person listening to this is that, you know, bring what you learned to your doctor.

And if you don't she doesn't want to hear it. Find another one because I can get well if, if nobody you try with to try to work with you. But you know, getting back to to to your story, I mean, because you, you, you just laid it open.

Okay. So, you were being exposed to to toxins, you know, and like I said, like I tell people we're talking about mycotoxins, but the reality is, when we're talking about chronic illness, I, you know, it's like, just whatever stressing your system.

Chronic illness is about your individualized response to the environment, right? You know, it's not about the thing that caused it. Yeah. And so and so tell us more like when you were, what was the what were the first things that you found, you know, like, and that, that changed your life a bit.

Well, firstly, when it came to what I discovered genetically, the way we even looked at the genome was different

than it was being looked at. So how was at that time?

And we've talked about this, which is that what does this gene mean? What does this gene mean? What does this gene mean. Right. And research is structured that way because that's the way science is dealt.

Like let's define each thing. And maybe this will turn this switch on or off. And this will turn this switch on or off. But all you're ever going to resolve there is genetic conditions, meaning that you were born with it.

You were born with a certain version of this gene, which directly correlates and equals to the problem. Now, if I can figure out a therapeutic to turn that off, the problem goes away.

But you're not born with diabetes and cholesterol problems and breast cancer and fibromyalgia and, you know, and and toxin, inability to deal with your environment, these things happen over time because it takes that many years, decades, often to do the wrong thing for so long to get sick.

Right. Diseases are rooted in inflammation. We already whether you talk to a natural path or an ophthalmologist, everybody agrees that disease is rooted in inflammation.

What we don't ask is what is inflammation rooted in? Why am I inflamed to begin with? You have inflammation, your cellular, the weak here, you're going to get that disease right.

Why did I get inflamed? Because what we're designed to do genetically. And I'll use my cell phone example to answer your question. We are not doing them.

We're in the wrong context. Our food, our environment in a big way is which is probably the silent killer that we don't see or experience. And then our lifestyle, you know, the way we exercise, the way we sleep, you know, the way we move everything about how we live.

So taking that as an example, glutathione ization, I am sure everyone here listening is somewhat familiar with Judith. I on that process of helping. So yeah, let's bind on to a toxin.

Send it to deliver, metabolize it. You drink some alcohol, you need to get rid of it. Right. So your body does a good job of doing that. But what is good mean?

Good means that we all do it. But to what degree? There's certain genes for which it's not just about a snip. Snip is that spelling mistake in a gene, which is you're looking for that variant.

And if you have a certain version, it does this instead of that, or it doesn't do it so well, you're tuning the dial down a little bit. What if you don't even have the gene?

Like forget about the snip or the spelling mistake? It's possible for a page to be torn out of your human instruction manual completely missing so you don't do that function.

That's called a copy number variation, which most genetic testing is testing. Companies don't test for because it's expensive. You have to run a whole other test.

There's something in between called an insertion or deletion, which is a paragraph is missing. So now if that's snip that's spelling mistake is so important that the genetic test you're paying for will tell you your list of snips.

How much more important is it to know that a whole paragraph is missing? Or you have an extra paragraph, right? So duplicating the instruction or a pages torn out, or you have an extra page duplicating the instruction and that that's an instruction.

What our genes, they tell your cells what to do. They're instructions if you're either missing or have a duplicate version of the instruction. What's going on with biochemistry that's being instructed by these genes or not being

instruct because you don't have them? Right.

That's what I found in myself, that the key glutathione genes, I didn't even have forgot about what version. I didn't have them. So this is exactly why me sitting at my desk right next to my business partner, breathing in the same toxic load I had to be driven home with migraines where I couldn't function.

He kept going and is still in that office today with no problem. Yeah, right. The differences are what we were wired for. Our capacity then matched to our environment, which was either matched or mismatched.

Our ability to cope. You could either change the input, get rid of the problem, or increase capacity by supplementing and diet, which are all things we can talk about, right?

Yeah. No, I think that's the two things I'd really like to emphasize is that is that one the idea of the one gene, one disease. And then I say that applies to I think there's what maybe 3 or 400 diseases, but most of them that are that have one gene, one disease.

Yeah. Most of those kill you before you're ten. Yeah. I was only a handful. Something like, you know, like like some of the genetic, Huntington's, you know, and stuff like that, that show up as we age, you know, all the diseases that we suffer with, as we age are multiple, multiple, multiple, multiple genes interacting with the environment.

And so that that's where, you know, I think what we're going to talk about is why software and AI becomes so important to understand this and that, that what you just said is the key is the interpretation.

You can have as much data as you want. I in fact, you know, we were talking earlier about Dave Asprey. He's one of our investors, a founder of Bulletproof Coffee, well known guy in the biohacking space.

So he had run a $50,000 full genome sequence. They ran all of his 22,000 genes. Yeah.

Why Interpretation Matters in Genomics

Germany met with some clinician, spent a lot of money on it. Then he did our test for a few hundred dollar. He said he learned more in one hour from this than he did from the full genome sequence. Why?

Because data is dumb. Unless you know what question to ask. It's just information, right? You need to interpret it. That interpretation is the key. Without interpretation, you're just telling.

You have this version of this gene and this version of that gene. What is that? You know what's wrong? How do I fix it? That's what I need to know. So what we did is what we believe the gap was when, like myself, you get a genetic result that tells you, hey, you got an 80% chance of Alzheimer's.

You should be asking, how did the 20% not get it? What were they doing right, right. We have a disease based health care system that's all about masking and treating stuff, waiting to get sick and treating it.

So even our research is done that way. Even our genetic reports are provided that way. You have 80% chance of this, 60% chance this. You've got to break a gene.

Go get him a secondary and cut your breast off. Oh, God. Right. Yeah. Yeah. So when that's come even what the recording does we can get into that also.

So then we did that. We studied the 20%. We said the of the 20% that didn't get sick. And by the way, we studied 7000 people over three years. It's the largest study of its kind in the world.

Where we sat clinically in front of people like this, with their medical history and their genome in hand, and understood what were their habits, the epigenetics.

Right. What were they eating? What were they surrounded by? How often did they golf and breathe in toxic pesticides? When a golf course, you know, what kind of hair dye did they use?

Like literally every detailed nuance to understand why did you not get sick, right? Why are you in the 20% with the exact same genetics that point to an 80% of risk?

Wow. Chronic disease, meaning that you weren't born with it, but you're going to cause it from your choices. Then we were able to then extract put into the AI the artificial intelligence platform.

Here's the various genetic profiles and here's what this person should be doing. Here's what this person should not be doing. And by the way, if they do this, they're getting sick, right?

If they already are sick, here's the things they can do to reverse that condition, because we're talking about the root cause. That's what should have been done from the beginning.

Health care research study. The healthy and teach those habits to the sick. And then everybody can sort of find that middle, right. So that's the work we did, which is kind of a completely different direction.

Yeah. No, no, that is the direction that we are. We're striving. But you you said at the end I like the National Institute of Health budget. It's all it's all focused on pathology.

Yeah. What's broken and and and it looks down into the individual silos of individual diseases and doesn't look at what, how they're connected for sure.

Like what what's what's happening and what you're, what you're doing is, is, is is just, you know, I said, but it's a lot more work. It's yeah, it is more it's work.

And the challenge in the beginning was exactly that, that we couldn't scale this out to like a clinician like you or anybody else that didn't learn what we learned.

So what we realized we needed was not to think like a genetic company. We had to think like a technology company. We had to build the AI to do the thinking, to make it easy, so that when somebody gets a report, it doesn't say, you have this version of this gene, this it says anxiety, low, medium, high risk.

By the way, here's why. Here's the genes that inform it. But you don't need to know. What you need to know is your risk and what to do about it. Right. That's what people really need to know.

What's what, what am I what's like the the thing that I might get affected by and what could I do today to make sure it doesn't happen? It should be as simple as it. And right.

And what's nice is that what you're talking about in do are the environmental and, nutritional and, you know, responses to life that if you're wrong, aren't going to generally cause you much damage because they're useful in the positive sense.

Not for sure. It's not not to take a pharmaceutical that may or may not, be right for you and may hurt you in the long run. Yeah. And that's maybe the perfect example to sort of put some color to this.

I'll give you an example of like one of our actual patients and how this applies clinically. So there's certain genes that that are commonly known to be cardiovascular genes that will tell you you have an elevated risk of cardiovascular disease, right.

Which typically isn't in the heart. It's usually in the arteries around the heart. That's usually where disease happens, right. So there's plenty of genes you can look at that will tell you high risk 60, 70, 80%.

But they still don't tell you why or what to do about it. All they did was studied people that were sick and said, here's

a genes that were off. So there must be something going on there, right?

So what's actually going on? Like I said, heart disease typically is in the heart. And this is highly related to, toxins. This is why I bring it up. We can determine genetically what quality of hardware you have.

Meaning if art if heart disease happens in the arteries, then let's figure out do you have good arteries or bad arteries that are more or less prone to inflammation?

We can actually determine that the inner lining, which is called the endothelial, that inner lining of the vessel, there's different qualities. There's stainless steel right where you know, you can be smoking, drinking, doing whatever you want and doesn't get inflamed.

And there's all the way down to paper thin where any little inflammatory insults are going to cause you a problem. And there's something in the middle.

Most of us, by the way, are middle or worse. There's very few people that have the heart, the strong, resilient stuff. Very few. So take ballpark. That aside, say you're in the bad bucket, right?

You weren't born sick. Take that person with that bad bucket. They still were born healthy and could potentially remain to be healthy until they die. Something has to happen.

So now some people with that bad hardware also like myself, are missing key detox genes. So what they're exposed to again, whether they're golfing and breathing things in, whether they're under construction and there's epoxy or chemicals or they're having the wrong coffee beans with toxins on it or whatever that inflammatory insult is starts to free flow in the blood.

Data aren't able to clear it because their detox pathways aren't the best, like myself. And it starts to cause that inflammatory insult, those abrasions, that inflammation here to this week cellular structure.

What's meant to happen is your methylation system, your anti-inflammatory army, as opposed to deal with that and reduce your. But what if you're also not doing well there?

And it's not just one gene. It's not just the MT father we're talking about. There's a whole cascade. There's 6 or 7 genes that go through this methylation process.

And if you're not doing well, they're in the entire process, not 1 or 2 genes. That inflammation becomes exaggerated, right? Your body can't fight it.

Still, at that point you're not sick, right? You're what you are is inflamed. The body's response to inflammation. Here it was a it will actually deploy cholesterol as a hormone.

Right. To reduce the inflammation. All right. When cholesterol meets that toxicity that caused the inflammation in the first place it hardens and deposits and it can't move some people genetically.

We can also determine with the gene their ability to transport lipids and cholesterol. So if you're also not doing well there, this again gets exaggerated even more because you can't trans transport as well.

That's the beginnings of cholesterol in you.

Studying Healthy Outliers and Building AI Insights

And it isn't until that happens that biochemically, in the blood you measure, there's some number. That's all. Your cholesterol numbers are high that you start to take a pill.

Right. And the purpose of the pill is to reduce the cholesterol numbers when the disease is actually endothelial

inflammation. And this of course, is your environmental inputs.

You've been making the wrong devices. Right. And we have to make reversible absolutely preventable. Yeah. And we have to remember that cholesterol is also one of our better antioxidants.

And so it's it's going up. It's an anti you know it's going up because there's a problem you know and knocking it down. You know again it in in certain circumstances is helpful.

But it's not dealing with the issue with the original problem. So like yeah no. So that's beautiful. So you know you what you guys have done is, is I say you really you've had to think about the process.

Yes. Yeah. We already know biochemistry what the body does the biochemical by biochemistry and genetics didn't speak to each other. That's what was missing. Right.

Genetics was this gene does this this gene does that. But that's not the way the body works. It's not 22,000 independent genes. It's systems that are already defined and already known.

We just needed to reverse engineer what genes instruct each step of each system. And now you can be very certain about things, but you need to interpret the way the body actually works.

That's that's kind of what we did. Right? Right. Because we have to remember is that just having the gene by itself is not, is not usually a problem. Because if this gene is in, you know, 20 well, if it's in 30 or 40% of people, it's been well compensated for.

You know, there's other genes that will compensate, but it's still not working 100% in the wrong environment. Yes. Yeah. And that's okay. And so and so and you folks are always working on you know, figuring out kind of gets it.

Look looking more at the clinical data and trying to. Yeah. So there's a few inputs. There's first of all what's being published. Right. Like what are the new scientific findings. Right.

Which are usually gene siloed. So they're not ready to for the public to use them. Something new has been learned about a gene or disease. So we take that.

Then we plug it into our existing ecosystem of insights to say we think of things functionally where does this fit. And I'll give you an example. So methylation the MT of our gene which everybody talks about that there's MPR, MDR for two.

There's a bunch of genes that make up your methylation system. And you need to understand them all because you can go to a doctor who says you have the best MT or for you're doing good.

Well, what if all the supporting characters are doing good? Then the system is failing right? So a new publication is now saying that Comt, the enzyme that's known to clear hormones and neurochemicals, brain chemicals, called me catecholamines or methyl, I name it because people, a lot of our listeners will understand it.

This is a column on methyltransferase. So it's one of those methyl methylation genes that people don't think about as an but nobody thinks of it because it's not part of that methylation map.

Right. Because it's a it's the next step once you've provided the methyl donors or methyl groups and all that's done, then Comt has to come along like the broom and sweep things away.

Right. And we don't think about if you have the slow or the fast Comt, how differently the outcome could be for that methylation process. Right. And so how much you can affect your mood.

Exactly. Yeah. It can affect your the neurochemicals in your brain for the most part are cleared by Comt. So take me and I'll use myself as a guinea pig again.

So dopamine is your pleasure and reward. So you can chemical right? It allows you to enjoy that tasty pizza or feel good at work when you did something that right.

So the process is you have to bind dopamine. There's receptors in your brain. Then once you're done meal, there's a gene that comes and breaks the dopamine down to get it ready to clear.

And then Comt, that same enzyme gets rid of the broken metabolite. So I have the DRD two gene. The least density of dopamine receptors. Right. So I feel it way down here.

I also have the fastest EMR on the fastest clock. So I last that long. So I am wired for depression addiction or achievement. Which one depends on the context I'm in.

If I'm not doing anything, I'm not enjoying and I'm not trying, I'm going to be depressed. If I'm feeding the pleasure, I'm going to be addicted. If I'm entrepreneurial, which, thank God, that's a rule.

I went down unintentionally. Then I'm going to be reward seeking it. I'm going to achieve. I'm going to take stupid risks, like handing the keys of my marketing company over to my business partner and said, I found what I need to work on. Yeah, right.

So that's the type of thing that my wiring will lead me to. But again, just to your point, gene, single sort of gene factoids don't mean much because it doesn't only it's not only a methylation gene, it's also very neurochemicals.

It's also clearing hormones for women that have toxic estrogen problems that compound what you're suffering from, from the toxins that you're bringing in.

But it's the same inflammatory load now coming from two fronts. If you have a slow Comt, you're not clearing those toxic estrogens fast enough. Right.

So it's it's multi sort of it shows up in so in different places. That's why again you have to understand the biochemistry first. How does the body work.

Then know what genes point to each step of the process. And you can be so much more certain about things. Yeah. And that you you brought up so many important points.

And one I just want to emphasize is to remember is remember that there's very few chemicals in the body, that do one thing. Yeah. Okay. I mean, B12 was one of the few major things and only has like, I think, two major functions.

But most every other chemical that we measure is in multiple of reactions. And the same thing with the genes, they affect many different pathways. And so that's that's the beauty of the work that you're doing is when you take into the clinical outcomes, you can make up for the for our ignorance.

Because sometimes we start off thinking we know what something does. And only when you look at what it's really happening in the population, you go, oh, there's more to this.

Yeah, yeah. Whenever you get to an answer that's leading you to probability, like 80% of people have ABC, you know, you're not finished yet. Yeah. Because the body is much more sophisticated than that.

We can be very precise. Yeah, yeah, yeah I I'll one quick digression.

Detox, Inflammation, and Cardiovascular Risk

I just want to remind people, is that one of the reasons that we don't have, evidence based medicine for a lot of the things that we do for people who are chronically ill is because most of the people who are really, truly, chronically ill, with their own set of symptoms are in the, you know, a few percent of the population.

And when you're doing a trial on a medicine, on a supplement or on anything you're looking for, 70, you know, 60, 70, you know, you love 80% response.

Okay. And the people who are chronically ill, often the people who get the ten, who are the 10% of the people who actually respond to something and that gets thrown away as garbage information.

And it's just the beauty of what you're doing with the genetics is making sure that those 20% aren't forgotten about that you have. You're diving down and going, what's happening with these people?

Yeah, these are things we have to learn. But the funny thing is that that evidence based model was developed down the street from us at McMaster University, like just in, Hamilton or just outside of Toronto.

So that's where it literally was built. And the original intention was around safety and efficacy rate. And the safety part we agree with, like, don't put chemicals into somebody's body.

That's not safe. The trouble is that it went down the wrong path. And the efficacy piece that's you can't take people that are individual and then average it out.

Right. This trial and error. And you have to do what's called and of one what works for you, what works for you and what works for you. And they're not the same.

The challenge there is in order to scale things out so that it works for everybody. The belief is, I have to come up with one product that's the most efficacious.

So maybe it's not going to work on three out of ten people, but at least I help seven. But it's it's not as complex as I need a million different. It's more like for example, in female hormones, we unintentionally realize that there's only six profiles.

Women always fit into one of six buckets genetically, right? We didn't start off that way. We started with hundreds of women that we were studying, and then all of a sudden, they always fit into one of six.

But now, first of all, the middle two don't need anything. They're optimal. The outside to both need a different dosage of the same thing. Right. So the outside two on this side are more estrogen dominant.

These ones are more androgen dominant. So they kind of need the same thing just more dose the more extreme you are. So now we've gone from one product one size fits all, which is failing 30 or 40% of people to six profiles that really only need two products.

So we can solve 100% of problems with two products. And that's true for most genetic systems that, that that's that's that's beautiful work. No. Because really because we you know, I mean, you know, off times when you listen to your patients, you wind up doing what I call pin the tail on the donkey, okay?

You know, try that. Oops. That didn't make me feel good. Okay. We'll try the other thing, you know, like estrogen. No, that didn't work. And we'll try, you know, more progesterone and more androgen.

You know, I mean, it's it's, you know, because the levels don't always tell you what to do. No, you know, the genetics, no. One combination or two is great because the levels will tell you where you're at.

And if something is off, the genetics will answer why, right? You now know where to focus. And there's there's certain men who were in Toronto, which is the hub of hockey training for the NHL.

All right. So we have all the best trainers here. Everybody flies here in on the offseason to train. And I can't tell you how many trainers have come to us saying that this guy doesn't recover.

He's got testosterone issues and we've tried everything and it just doesn't work. So what is try everything mean?

We've seen many NHL players that come to us with gynecomastia.

Man boobs. Yeah, right. Because the guy's testosterone levels are low. So intuitively, what do you think? Give him some testosterone. Right. So they put on a androgen gel pack.

It's like a thing you put on your stomach where it absorbs through your skin. Androgens testosterone. But in your genetic cascade, what if you're converting all that testosterone into estrogen?

Yeah. The more testosterone I give you, it's just going to net more estrogen. There's no way to that becomes more testosterone. What you actually need to do is block the conversion.

Right. So again that comes back to the test. Will tell you in time what's wrong. This person doesn't have enough testosterone how to fix it or why is the genetics.

Here's where the guy is failing in biochemistry. So intervene at this location not at this location. Yeah. You know, this is beautiful work. I mean, because, I mean, it's it's just so good to hear that you that you're spending that well excites me.

Is that I there are other companies out there that are looking at lots of studies, you know, improving things, but you're doing the next step. You're looking at people. Yes.

And and the dirty. What? Nobody likes the dirty information. You know what I mean? Like it's because it's it's not clean, you know, it's not like it's not yes or no.

It's like you got a group of people and some of them respond to lots and then respond a little and, you know, and that's beautiful. That you've spent the time and money to, to get the AI to actually be useful, because too much of the time it's I mean, what can I say?

You know, I've been I've been a doctor for a long time. And, you know, I've, I remember when everything was going to be a virus. You know, this was back in the 70s and 80s.

Everything was going to be a virus. Okay? And then 2000 came and everything was going to be a gene. You know, and, you know, and all these things, each one has information, but nothing has all of it.

And but the and even now so many people are trying data mining in this in that. But unless you really spend the time and do the the careful clinical evaluations, the data mining is garbage.

Yeah. That's right. And that's just really exciting. So I going off into things that excite me. You know, because this is this is the work, you know, like, you know, as an individual physician, you only you have your experience.

And that's colored and you forget. And it's just good to have people who are actually, you know, putting this into, into systems because that's when we can really share, you know, information.

And yeah, that's when you can apply it. It becomes easy to use, first of all, because it's it's very it's very challenging to be a practicing physician trying to incorporate genetics because you're already so busy, you already only have 30s to read the chart before you walk in the room.

And now I have to go interpret a 300 page genetic report before I see this patient. Right. How do you do that? So, and they expect you to know it inside out.

And you can of course you can't. Because, you know, the issue with genetics is that, first of all, you know, nothing has a name that really means what it's supposed to mean.

You're actually a few of them do with least Comt kind of tells me what it does. Yeah. Obviously the genes our God, we go back and then you know, and so they don't really you have to do levels of reading to get any information

about that.

That's what people have to understand. This is not a straightforward, you know, read a paragraph and know what's going on. Yeah. And that's a big part of the work we did was we, before launching anything actually last year or so, from January till June of last year, I probably spent time with about, I'd say 80 to 90 different physicians to ask them, why does genetics not work right?

What's the problem? And most of it had to do with it being not easy to use. That was the majority of it, right? And a big part of it. So they didn't really know what the solution was, but they told us all the problems.

And so what we believe the solution is, and what we've done now is two things.

Methylation, COMT, and Neurochemical Balance

First of all, the consumer, the patient and the clinician don't need the same thing. They need very different things. Right? The consumer is saying, give me everything.

I'm just giving you my DNA. You go mine it and tell me everything you can find, right? And make it easy for me to understand. The clinician is saying, I just need to know the red flag so I can fix that.

Yes. Right. Exactly. That's what again, I need to know what to recommend. Because if you're uniquely telling me what's wrong, meaning that you're looking at this condition from a unique perspective, then your solution is also going to be unique.

It's not the symptom masking solution. So that's what we did. We built two separate reports. The consumer gets a more digital experience where they can drill through things and read and learn.

And the consumer the clinician gets a very dry report. But straight to the point, here's what's wrong. Here's what to recommend. Here's how you fix it, right?

So that as you walk into the meeting, your it's right there in your head. So that was one the second big thing that we learned, and this is again from talking to people, is we had to speak to the condition.

Right. People don't again, like you said, what does this gene mean. Gobbledygook, which is it's all gibberish versus anxiety, addiction, procrastination.

Here's the human behaviors. Here's what people resonate with. Where do I rank in that stuff? And now I start to understand how my brain works, and I start to understand how do I even perceive the problems I will be talking to when I say it's seven out of ten, is it really seven out of ten?

You know, when when Doctor Gordon tells me something, can I actually comply? How do I deal with reward, you know, so that level of insight, if I can just look up anxiety as opposed to 12 genes that might equal anxiety and try to interpret just so much easier.

So that's what the key thing we learned was it had to be easy to use. And that just done by splitting it up and then speaking to the condition. Yeah that that's that's beautiful.

And you so right now you're like when you were you were talking about you know, you look at glutathione and methylation, you know, methylation. But obviously you're looking how many?

I mean, you know, and this is an expanding database, I'm assuming, you know, you're constantly growing what you're doing. Well, like for when you're looking at inflammation, especially now in the, in the times of, of post Covid, which I, you know, I think is going to turn out to be for most people, you know, there's some clotting and a lot of it is just persistent inflammation, perhaps is a piece of the bug is still, you know, piece of the protein might still be there, but whatever.

But it's persistent inflammation. And again, most people deal with that without a problem. But some people don't. So what are your how are you looking at inflammation I should say is, I guess across how many pathways.

So are you. Yeah. Okay. So we look at a few different things. We look at really three big ones. And that's, the glutathione pathway. Right. Which extends into the UGS, which are, sort of sort of supporting characters of growth.

Then, look around at what it's called. Right. And then, methylation is number two, which is again, the phase two. You know, once you're done with the detox, then we look at antioxidants and we feel that one place where genetics fails is they combined, detox and anti oxidation when they should be looked at completely separately because one supports the other and you're not necessarily doing the same in both.

And that algorithm that I of how does you know, what does this look like. What does it equal. You have to think of it that way. So anti oxidation you could have the best detox and the best methylation but still be under extreme oxidative stress because your mitochondria doesn't clear oxidation.

Well right. That. So that may be supported by the GST genes. Getting rid of the oxidation once it's in the blood. But you don't get it. It's kind of like you have this fireplace with no chimney.

So as you're taking in oxygen to create energy, you're creating oxidants and there's nowhere for it to go. It's just like piling up on the cell and creating this load.

This is why you sometimes see, you know, these marathon runners who are aging and they're some of them look amazing and some of them are extremely haggard.

Lee and the skin's almost like leather and all wrinkled, and the hair's all white because they've prematurely aged themselves. That high level of oxidative stress they put themselves through, they weren't genetically matched to that activity.

So this is why we very purposely extract oxidation where it's normally combined. It's like sort of the same pool as a separate process entirely. To be more precise once again.

Right. You know, that that's so important because, you know, oxygen, you know, being able to deal with oxidative, forces, I don't call it oxidative stress because it's an important part of, of your body's healing mechanism, you know, to have a lot of oxidation.

It's just being able to also be able to deal with it. This is the yin yang, the balance of the body. And if you say you're looking for the balance, there is, are you prepared to, to, to deal with it because this is it's going to happen if you use your body, you're going to have to express, in fact, you know, that's what exercise is.

But, being able to handle it is critical. So yeah. And that's it. And again, and that's the beauty is that if you understand where the issue is, so are you able to break it down to a granular level enough to be able to recommend, individual support supports for, for the for.

Yeah for sure. Like we every report we issue has supplement recommendations in it. You know like here's what you here's what you need to plug your genetic holes and gaps.

It's like you have this bolt where the water is coming in. Here is the specific cork size. You need to plug that hole. Right. So, and that's really what bad genetics is, is that you're just don't do certain functions properly.

So we know in some cases what supplements up and down regulate genetic expression. So how do we take this slow gene and make it move faster. Versus some things you need to simply support or mask the problem.

And it depends on what problem we're talking about. But what we just talked about, what oxidation. Yes for sure you can make. So on to that idea oxidation gene.

Just push it. You can push it harder with the right ingredients. This is super super super. You know one of the problems of working in the same field for so long, superoxide dismutase.

Just to remind it. Exactly. Yeah. Yeah. Say the word yeah. Yeah. So exactly. So that's what that's what it is. And then we know that if you're not doing well there, there's certain ingredients where we're not trying to mask the symptom of your skin sagging and aging.

We're saying, let's get that gene to work harder. So you're not having this root cause problem. Which cellular health is the root of inflammation, right.

If your cells are under stress and that's where inflammation starts. So let's let's get right to the root. All right. So so yes. And we make sure that wherever we're saying something we're also recommending something good. Yeah. Good good.

Because that, that, that that is, is so nice because there's so much information out there. And this will help what I call the shopping bag. Visit, you know, I have a lot of patients, you know, they just accumulated so many supplements.

Yeah, they actually, you know, besides, some of them might not be helping, and they're expensive. I just don't think taking that many gelatin capsules or whatever on one of the capsules made of a day is necessarily good for people, you know?

And it's nice to be able to help them, you know, really hone, you know, what they, what their body needs because that that's the problem.

Diet, Nutrients, and Personalized Recommendations

You're taking 20 or 30 supplements a day and maybe, you know, seven of them are really important for you. Yeah. But so I, I agree and understand with the thinking that you can't possibly eat your way to support proper supplementation anymore, because the food we get just isn't the food that we used to have.

But I also understand and agree that our body was not designed to take in nutrition by scoops of supplements, meaning that heavy extract, condensed dose of something, right?

It's not the same as if you were to get it the natural way, right? The way you chew it, the way you the enzyme activity, the way you swallow it, the way it's metabolized.

All of that is different when it comes from food. But again, we are in a place where it's hard to get it from food. So you have to be ultra careful there.

And if you can ramp up what you're doing in your meal planning and sort of reduce supplementation, you might be better off. Absolutely. Absolutely. Yeah.

You know, we yeah, I mean, we we forget how complex this system is. And every time we take a supplement, we might be feeding the wrong bug in the gut.

When we take food, we have a much better shot that we're eating. Everybody. Yeah. You got a neighborhood we have to feed? Yeah. No, it's it's, you know.

Oh, yeah. How could I say it's such a cultural, a it's a cultural issue because, you know, the the idea that there's a tech and a technological fix for every problem, not just that there is this, like, you know, this, this bullet, this magic bullet for each issue.

And, you know, life isn't like that. It's just it's it's just not, you know, I mean, again, you know, again, I always say our hospital medicine, near-death experiences, you know, we have we we know what we're doing.

You know, we got 1 to 1. We know, but but once you once once you're, you know, out of the operating room, then it depends on your body to heal. And that we don't know, we don't understand very well.

And the work that you're doing is beginning to give us some of that wider view of what support your body needs for healing, you know, and in like using it in a in an ideal world, we know, you know, fresh air, sunlight, sleep and a healthy diet.

But a healthy diet even. And that's something I'll try a a challenge for you guys for the future is, looking at the, the, you know, because we come from such different parts of the world, you know, ancestrally.

Yeah. And, and I can't imagine that we've evolved to the point where, the diet I'm eating today, is the diet that, my ancestors ate and and that kept them going.

Well, we've done a lot of work on diet, and we started off, thinking the way, like, neutral genomics type tests think, which is let's go through all the vegetables and fruits and everything and tell you which ones you're supposed to eat right.

Then we realized that that's far too complex and nuanced, and it's really not even that accurate. So instead, what we said is if we can just teach you the macros, what your body metabolizes, you're smart enough to plan your meals from there.

And what does that look like? We know with certainty how you metabolize fats. So should you be on the keto diet or not? Right. Very high level macro, but very impactful.

Also, yeah, we know how you deal with the enzyme activity to break down things like beans, chickpeas, lentils or gloom. So should you be a vegan or not.

Right. There's some people that we say great, go for it. But for most people we say it's a bad idea. It's actually going to cause some inflammatory issues.

We know how you deal with starches and your insulin response. So are you okay to be eating bowls of pasta or not? Most people are, you know, low carb or thinking that direction, but for some people, it's actually a good thing.

There's a one, a professional female athlete. We deal with that we identified. Her core root of her performance problems was that she cut out all carbs when she was actually designed to run off of carbs.

Her body is designed to use carbs as fuel. She then she started to flourish. Right. So that's sort of macronutrients. And there's the micronutrients. Vitamin C, vitamins, vitamin D, which is so important.

Of the 22,000 genes in your body, 2000 require vitamin D to function. So 10% of your biochemistry is dependent on this one micronutrient, which, you know, acts as a hormone.

Not really a vitamin, right. But what we don't understand is, again, we have a biochemistry health care system that measures things in your blood and then tells you what's wrong.

So looking at your vitamin D levels in your blood is 30% of the story. Because genetically there's three steps. There's first, yes, I need to get vitamin D from the blood and from the sun.

I story from the sun and from food and put it into my blood where it's where it's stored. Then I need to transport it to the cell where it's actually you.

That's an entirely separate gene and separate process. So I could have great amounts in my blood, but if I don't transport to the cell, I'm not getting enough.

Once it gets a cell, I have to bind it. That's a third genetic process. And if I have this low binder that I get in not

getting enough. So where do you see this?

People that are more equatorial Mediterranean climate, where their ancestors spent a lot of time in the sun, right. So they were getting enough. They do a job of putting in the blood, but they mitigated the usage of it.

Right? Because it was too much. So they were slowed. They slowed that down. Right. And now all of a sudden, you're when you're taking your vitamin D, you're taking 2 or 3000 at you because you don't feel right. But guess what?

You can only actually use 500 of it. So you actually need to split the dose three times a day, because you're designed to only use a small portion of what you actually take in because of what your ancestors did.

So that's macro micronutrients. That's one half of diet. The other half of diet is perception genetically meaning when I say I'm done, do I actually know if I'm done or not?

That gut brain connection. There's one gene that determines how well you experience satiety. Feeling full? Yeah. For some people it takes longer and then they need to know that so they can look at their plate and realize they're going to be hungry for 20 minutes after they've already eaten.

That's right. Yeah. There's some people that there's a gene called MC4 that determines satiety of the tongue in the mouth and that satisfaction that you need to get from food.

Right? That that satisfaction that drives the chewing, which drives the enzymes, which is why you do it. All right. If you had the poor mic for even though you're done your dinner, you're going to start grazing.

You're looking for the Doritos and the cookies and going to the pot and scraping up the stuff at the bottom. The greasy stuff, which gives you all the flavor, you know?

So. Okay. Yeah. So that that's that person that needs that mouth satisfaction. Right? And they don't even realize they're doing it. Then there's people that lean on food as a coping mechanism.

Their serotonin levels are off and you irritate them. If they have a bad day, their body doesn't want to be stressed. Cortisol levels go up, so it points them to food to get happy again.

There's some people that binge. There's some people that have addictive tendencies. So if you don't take the sort of neural context and understand who you are and how you think and perceive and then combine that with metabolize ation, which is what we talked about, you don't get the full picture.

It's hard to actually implement change. This is why so many people fail with their diets, because they're they're doing something that work for somebody who is not them.

Great. Both of what they're eating and how they're structuring it mentally. And that can all be very precise. That's amazing that that that's really beautiful because we struggle with that every day.

You know, when we talk to people as clinicians, you know, we can hear we can hear these patterns. We can, you know, and people people are pretty good at reporting how they do things.

But if they understood that another level of what was driving it. Yeah. Easier to begin to, you know, to to hold it a little bit differently and make you say, to make the right choices just to know that, you know, if I can somehow slow down how fast I'm eating and maybe distract myself with a cup of tea or something after dinner, I might not need to have that second.

Yeah, you know, because I'll be full, you know. Yeah, yeah. No. Then that's so, so beautiful. So beautiful. And so you are. You are what? So when people, in order to do your test, I mean, what do they have to do?

How does the process work? So people can go directly to the website. It's it's open to the public. We also the majority of what we do is working with functional medicine type clinicians and supplying them.

And they work with their patients.

How the DNA Company Works and Closing Remarks

So if you go to the DNA company.com, that's our website. The that the core test is called the 360, the DNA 360. And in that we provide six things that we believe everybody kind of needs to know cardiovascular health.

And each one of these six things is broken down to a more micro things. Right. So cardiovascular health mood and behavior of the brain, all of the stuff we've been talking about, diet and nutrition.

So the stuff we again just talked about hormones, which is really our own fitness body type hair, skin. How do I lose weight? How do I put on muscle, that type of thing?

Cellular health immunity and detox and inflammation. And then the last one is sleep. You know, there's some people that can fall asleep. There's some people that can see us sleep.

Some people sleep through the night, wake up feeling like garbage. We've understood. We understood all that genetically. So we believe if you go through these six things, which is why we put them into our core product that you've kind of taken yourself to into the next level, like you're preventing disease, you're slowing down aging, you're helping reverse whatever conditions.

Yeah, because most chronic diseases are drawn from one of these six buckets. Right? Yeah. You can result. You either they caused it or they're keeping it going I think.

Exactly. Yeah. Yeah. So that's, kind of where the journey started. Did you get the tests? You get these reports you drill through, you learn if you want us to send your clinician the summary that I talked about, we'll do that also.

From there we have various like coaching programs and things that people can get into if they want to implement, say that, oh, I love what you're telling me here about how I lose weight.

Can I work with a coach to build a, say, a nine week program to make sure I actually do it right? So we have people that are sort of genetically trained to do all that, and that's what we offer.

It's it's like we don't want to be a data selling company like most genetic testing companies are. Let me get your data to sell it to some pharma company.

And so my test is designed not for you. It's designed for that guy who's paying me ten x what you're paying. You said instead, let's be a data mining company.

Let's give you what you originally wanted, which is look at my DNA and tell me what's going on. And then we believe you'll live with us ongoing for coaching and other solutions.

So that's that's how we work. Wow. Okay. That's I like it, I like it, I like it. So. So you're not selling people's data? No. We purposely. So here's the thing.

In order to sell data, we could not give you the reports we give you because we again, we would have to design the data extraction for what the data buyer wants.

They want a large number of steps, those spelling mistakes because they're trying to design personalized drugs. Right. We want as much data from he's this old he's of this ethnicity, this religion.

And here's his health history. So now all of a sudden, I'm going to put that into a big AI data machine. And when I

find 100 or 200 or 300 of the same of you, I can start to find that one snip.

Right? And I can design a drug to turn that snip on or off, and there becomes your one size fits all solution. But it's only going to work on six out of ten people, right?

Right. And for even for those six, it's going to work really well on 2 or 3. And for the other three, it's going to be kind of okay. Yeah. Right. And for three it doesn't work.

Yeah. No, no, it's it's it's clear that the, the biochemistry is driving is turning on the snips off. And so yeah, it's the wrong direction. But they'll take them a while to figure that out.

You know, I said it works for a handful of diseases. Really. Well, the rest of a lot of a lot of noise. You know, it's been 20 years. Well, not quite 20, but about 18 years that they've been pushing this agenda.

And if you look at the output, it isn't really that impressive except in cancers and in a few diseases that are really clear cut. Yeah, yeah, yeah. You know, it's a, it's a failed strategy, but there's so much money behind it.

I always tell people medicine is like aircraft carriers, so it doesn't matter if they're going in the wrong direction for a long time to change direction.

Yeah. It doesn't turn. It doesn't turn quick. Yeah. Okay. Well, anyways, so this was a pleasure. I mean, I really appreciate this. I mean, good information and I'm looking forward to, giving you your run, see how it goes to some of our patients.

So and I hope some of our listeners go out there and give it a try and give us some feedback for sure. It was a pleasure. Love joining you here. And great talking to you.

Yeah. Well I look forward to it. And yeah, I'm just and really thank you for for having the inspiration and the drive and, and that dope. You know, some people say dopamine is really the, the hormone of more.

Yeah, yeah. And the drive to do more and learn more, is really helping all of us. So thank you. No. Thank you.