Introduction to DNA and Longevity

– Welcome to this episode of the Reverse Inflammaging Summit, Mind and Body Longevity Medicine. And I'm your host, Dr. Robert Lufkin, studying longevity is not complete until we take a close look at DNA. And today we're fortunate to have one of the experts in the field Kashif Khan is the founder and CEO of an important company in the DNA Longevity space that we'll be talking about and he'll share his knowledge with, with us about all aspects of DNA Kashif, welcome to the show. – Well, it's a pleasure.

It's a great thing you're putting on for everybody's, we're happy to be here. – We're so excited that you're able to join us on this episode. But before we, before we get into it, maybe you could just take a moment and tell us how you're a little bit about your background and how you came to be so interested in this space.

– Yeah, completely unintentional. I didn't come, didn't come from the industry. It was really and you hear this a lot of in these sort of great functional medicine type stories where it's a self healing journey So I, you know, I was wrought with like a bunch of different issues, Zima psoriasis. And, but when I say eczema, it wasn't a rash.

I meant I couldn't open my left eye literally, right. Psoriasis, my knuckles would bleed if I were to class them like this uh migraines, which was probably the worst part. My business partner, you have to drive me home. I'd be pulling over and vomiting, you know, part way through from the pain. That's how intense it was gut issues and depression issues. So now that I painted that beautiful picture of who I am in my bio, you know, it all went away and it didn't go away immediately.

At first, obviously, headache, you go to the doctor, you get to go to a gut doctor, go to some psychotherapists about the depression. So I had, you know, 56 different siloed approaches to five or six different problems and multiple pill pill prescriptions. And I kept asking everybody, why is this happening? That was my big question cause I had never been sick before. They never experienced much in terms of needing to go to a doctor, right. So, and that's the answer I wouldn't get, I couldn't and I to me is like, am I eating something wrong?

Am I exposed to something wrong?

Personal Health Journey and Genetic Discovery

It didn't make sense to me all this stuff all at once and I couldn't get that answer. So I started digging and I found some functional medicine practitioners. I found some homeopathic practitioners and natural passed. I started learning all this stuff and it all came down to why am I expressing or behaving differently than the people around me?

Even if I was food or environment, they're eating and experiencing the same stuff. And that's when I dove into my DNA and I found that there were some key genes that forget about what version or what. I didn't even have them.

I was completely missing, they're called copy number variations, completely missing very protective genes. And what the root of all this was. My office was sitting a few floors above a manufacturing company and they were pumping toxic pollutants into the airway. And I was sitting there for 8-12, sometimes 15 hours a day depending what was going on.

I missing key glutathione pathway genes. So the ability to bind these toxins, send them to deliver, clear them from the body. And so they were causing crazy inflammation.

And I started having all these inflammatory conditions like headaches, like eczema, like gut issues. And then I started to have autoimmune conditions like psoriasis, for example, right? Because the body can only take so much.

So when I learned this and I targeted that I stopped targeting the problems. I started targeting the failure in my genome. It all went away and it's been what I think good five years now, I have not been sick since then I don't even catch a common cold anymore.

You know, truly my kids come home from school sick and I don't get it. So anyways long answer to your question, but that's kind of the journey I went through and I learned that this is something that everybody needs.

– Well, that's such an important point that, that without looking at our DNA and our basic structure, we can do all these lifestyle things and, and we may not be aware that because of our own personal DNA modifications that we have, we maybe more success in your case with the glutathione issues.

So it's so important to look at that. It seems like, well, before we kind of dive into that, maybe you could tell us a little bit about, we ask our experts kind of your, your, the way you look at longevity and then how inflammation plays into that? Why do we age?

What is inflammation? How does that play into it? – So, the more we dove into So what we did do something really cool is that we spent three years studying 7000 people. And this is what I believe, like looking at it from the outside, what was missing from genetics.

I would talk to the clinician frontal medicine doctor, my, my MD and the genetics and these people, there was a big gap in between. They didn't talk. So the geneticist didn't understand what the clinicians need and the conditions didn't understand what the genesis were trying to tell them. And so that's the research I did.

I spent three years studying 7000 people with our team to understand why did this person with an 80% propensity for Alzheimer's not get it and why did this person with a 60% chance get it a lot sooner than they were supposed to? So what are those epigenetic factors, the environment, nutrition, lifestyle choices, some are obvious some are not that created a load on this person's poor genomics that then lead to health issues, right? So now having said all that, we, I learned over and over and over and over and over again, no matter what problem we're trying to solve it all came down to innate cellular health. What does the terrain look like?

Head to toe? – Right. – What's going on at the cell level? There's multiple insults that can take that in one direction or the other environment is a huge silent one that we don't pay attention to. And that's what it was for me is that there's, there's all these things that at the the ability to protect and recover the cell, right? Genetically. That's the big gaping hole and to paint a picture as to why we can dive deeper into it after There's a misconception that we are wired like our ancestors, meaning grandma and grandpa, our ancestors.

If you look at our DNA, our DNA is a quarter million years old. We have not changed in 250,000 years. So when we say that we're wired like our ancestors, but we won't go past the grandma and grandpa to understand what that means. The habits that we are forming today and utilizing today, the environment we're in the food, we eat the exposures we have versus 250,000 years of history.

And what we're actually designed to do the reality is we're in, is a tiny blip in this sort of chronology, right? And so now you start to understand why we are completely failing health wise versus what we live in. We're not wired for it.

So that's in a nutshell. If I took all of what I learned in the 7000 people, here's your nut show. We are not wired for our reality. That's why we're so sick. – So we're, it's such, it's such an important point. So then to recap, then we're not primarily wired like our grandparents are, but to really understand it, we need to look back to hundreds of generations, hundreds of thousands of years to that.

Why Modern Life Drives Inflammation

Pre Many people talk about pre agricultural times, hunter gatherer times is that, is that where we're going with it so – Modern, modern agriculture is 10,000 years old. So even that is a blip in time, you know, and even that modern agriculture the current agricultural practices are maybe 100 years old. Right. So, there used to be, if you talk about 10,000 years ago, thousands of grains, literally thousands.

Now there's 10 core grains that we rely on because everything is industrialized and sort of standardized across the planet. And that's why this, you know, threat of gluten is such a threat that didn't used to be because we want the soft fluffy stuff. Right?

That's what's easy to sell, easy to buy, easy to market. So things have, it's, you can't compare this reality we're in versus what our ancestors lived through. If you look at bread from 10,000 years ago, it was a source of protein. It was like eating meat, right? Read the nutrition label on today's bread.

It's not, it's not made of that same stuff. The plants themselves were vibrant and thriving, you know, the ratio of a current plant, which is usually, you know, some, I would say less than 5% proteins in the majority.

Then there's fibers and other minerals and nutrients. It was very much the opposite. You could be a hunter gatherer, not need to kill an animal and be a sort of protein rich, good muscle building off a plant. So, the reality of what we're living off to your point, it's not the same. So having said all that, that's the good stuff. What do we, but what?

There's everything else. What about the environment? The chemicals, the stress, the lack of sleep, these are all new factors that we didn't have to face before. – Yeah. And then what you're saying to that as far as the personalization aspect that we all have, we all have our inherited DNA. But individually, we may have that issue with Bluetooth ion, the detoxification pathway that you had or I may have something within as inflammation that I can't handle or I can have a leaky gut mutation or, or something like that. But, but so you're saying grains avoid them just because they're not 250,000 years ago in the modern grains are so nutrient poor anyway, right? But or is it the gluten and the proteins? – We see this all the time where, you know, we're dealing, for example, with the Asian family and we'll tell them that according to your genetics, you have the suboptimal AM Y one gene.

So you don't metabolize starch as well. You should, you can't utilize starch as a primary nutrient source because you don't convert into glucose. Well, and your insulin response is poor.

I think it's called TCF 7 L2 gene. We can determine how well they respond with insulin. So if you eat like this, you're likely getting diabetes. It's almost certain, then they'll say that doesn't make sense because that's what my ancestors ate.

Right? Standard answer. Which makes sense. This is my ethnic food. Yes. But if you look at what your ancestors ate, rice comes with the hull. There's a brown fibrous hull that surrounds it, which we now remove because the reality of globalization is you have to dry it and you have to ship it all over the world.

And that hull rots. So you don't, you can't store it and ship it so it gets removed. So what do we then eat? You're now eating the white kernel, which is molecularly the exact same thing of sugar.

If you look at the molecular structure is literally like eating spoonful of sugar, right? In terms of what it does to your insulin and how it's converted and you removed all of the fiber, which was naturally part of that plant and where all the minerals and nutrients are there, actually the hull, right? That then mitigated the starch and sugar response that was in the kernel.

So what we've done our practice is simple things like that, right? Yes, you're right. Ancestral e that's what your ancestors ate. But look at what they actually actually with precision eight. It's not this bag of rice you're buying, right? It had the whole plant which in its, you know, mother nature's work, it was perfect as it was.

– Yeah, that personalization aspect that the D N A provides is it's, it's so powerful and it may be provide sort of an explanation that we've had where I talk to patients. They wanna, you know, they understand how harmful sugar is and everything. But they still, they put it in their coffee because they said, hey, we're in a Starbucks.

Everybody in this room is drinking sugar in their coffee. But only half of them are gonna be diabetics, you know. Well, it's sort of like everybody smoking cigarettes in this room, but only, you know, three of them are gonna get lung cancer.

That doesn't mean. But part of it is the underlying mechanism. And that's, and if we can like you say, dive into that, that's really a fascinating, fascinating area.

What are some of the genes that you look for or are there specific markers for inflammation that would help people for acceptability and, and all, – And first of all, what you said is exactly it.

It's like having your personal GPS. Yes. Everything is a problem, right? That you'll hear people say, well, if I have to follow everyone's advice, I'm not gonna eat anything, I'm gonna be drinking water, right? That's what you're here.

So, the truth is that all these things that we're told all these podcasts, all these youtube videos, everything that you're consuming where everybody has an opinion on what to do. All we're saying is, you know, exactly what your body needs.

Personalized Nutrition and Ancestral Diets

If you under what is your, your DNA is an instruction manual, telling yourselves what to do. And in that instruction manual, some of us have some various variations.

Right. There's certain genes doing a really good job, certain genes doing a bad job. Some genes missing some genes. You have extra copies and they're over doing their job.

Right. So if you understand what your map looks like, if you go buy a microwave or a car, you read the instruction manual, you don't just start putting oil wherever you want.

You figure out what the right cap is and put it in the right place. Your, you take care of your car at that level. What we're saying is we now have a human instruction manual we can read that tells us exactly.

Should I be a vegan? Should I do cardiovascular exercise? What happens when I don't sleep properly? Why don't I sleep properly? Why do I have anxiety all the time? Why the same exact work makes me feel like this, but it makes somebody else feel like this. Why do I have no motivation?

Every decision we have to make that we're trying to solve when it comes to health and wellness. You don't need to go through trial and error. You don't need to go through one size fits all.

You don't need to take somebody what worked for somebody else and hope that it works for you and go through 5678 different things before you find the thing that work while all along, probably hurting yourself and the things that didn't work.

Right. So that's to your point, exactly what it is. It's that personalization on day one, whatever you're working on works because you're doing exactly what your body needs and you're removing exactly what your body can handle.

And then going back to your question about inflammation. So if I think about sort of baseline and there's a few things we can talk about. The first thing I think about is oxidation oxidative stress, right? And when we think about what I mean, information is the root of sort of degradation of the cell, your damage to your DNA, right? So the DNA gets damaged, truly starts breaking apart, the cell starts opening up and then you start to have sagging skin whitening of the hair. That's the signs of what's happening at the cellular level. They're just not as healthy as they used to be.

So that, that inflammation, oxidation is regulated by the sawed two and G P X genes sought to be by the primary. So S O D two. And what we're saying is when you take in oxygen to create energy through the mitochondria, there's this reaction where you make energy, right? And there's a, there's always a byproduct whenever you consume any fuel, including oxygen in the cell of smoke, right? You burn anything, you're gonna get smoke.

So some of us don't do such a good job of clearing that oxidation, that oxidant is actually what it is. Oxygen becomes oxidant. Life slowly ages you write, it creates this irony of this is the thing that that's the outcome. So the

way we deal with that at the mitochondria is we need to get cleared from the cell, like, truly get it out and put it into the blood for the next job to happen.

But let's get it off the sell a lot of us. In fact, more of us don't do that as well as people that do it. Well, Some of us are in a really bad bucket where we do this about -70% in terms of our capacity, which means if you're running on a treadmill in oxidative stress, you may be running yourself into inflammation and you may be aging yourself more rapidly thinking that you're actually helping yourself. So that one choice you had the motivation to go do something. But did you do what your body needed?

The same person for whom you know, it may be true that, you know, cardiovascular activity works for the same person. The same gene pathway could equal. It doesn't work for them.

That same gene could put them in different directions. It's very simple choice. What do I do cardio or not? So, for that person, what ends up happening? Okay. Now, I don't deal with anti oxidation.

Well, it's sitting there and choking and suffocating the cell and it's, it's becoming more exponential, the more I do this and then step two, how well do I then deal with the clearance in the glutathione pathway.

There's a gene called G S T T one that's think of it. In the simplest terms, these traffic cops in your blood that are meant to go find all the nonsense and send it to the liver and get rid of it.

So step one, you may not be doing, dealing with the clearance that well, and if, and of the little that you're clearing how well you then removing it from the blood, that's GSTT- one. This is a gene where it's possible to have what's called a copy number variation.

Meaning forget about what version you might not even have it just missing. Why? Because our ancestors, if you think about who they truly are, didn't need it.

They didn't live in our reality where they were constantly having to remove stuff from their blood. That was a toxic insult. So that combination now leads to these inflammatory agents head to toe in your vasculature causing inflammation.

Where are you going to get the problem? It depends where your cellular structure, whether it's cardiovascular or breast health or brain health isn't doing well.

So that's the thing that will sort of cross the threshold first and turn into a disease. – Yeah, I love the story of these genes that, that have one function in our ancestral world, but in our modern world, they're, they're negative and that you hear about uh a po e with its involvement with Alzheimer's is and then also cardiovascular disease.

Inflammation, Oxidative Stress, and Detox Pathways

That's such a fascinating story because ancestral E A Poe we know, let's see, ancestral E eight E two was a pro E four was the most common, right? That had the survival advantage because it drove inflammation. And then now people have a pro E four at increased risk for Alzheimer's and cardiovascular disease because of the inflammation, a common root cause for both of those diseases, right? And – That's true.

And the root of that is when you think about inflammation, ancestral e it was cute, acute sorry and periodic it was it's situational meaning I cut myself with a knife, a rock fell on my finger, right? Something I was working and something happened.

I went to battle. We are suffering from chronic inflammation insults, right? It's not that once a month I did something wrong and I hurt myself and now I need to recover.

You needed the inflammatory response. And like you said, the people that dealt with which is now the problematic happily for four used to benefit from that because the reality was very different and we are still wired for that reality.

Our body when you're born still thinks that's what is being born into. And those people are meant to benefit from that variant. Now what happens?

You live in LA, you go in traffic for two hours as the equivalent of a pack of cigarettes. Like truly, it's actually equivalent to smoking a whole pack of cigarettes.

You live in New York, you're running jogging down the street thinking you're doing something great breathing in all that pollution. Right. You buy a mattress, it has toxic fire retardants on it that you're breathing for eight hours at night for the first few months as it's off gassing, you buy a memory foam mattress, you're rolling around popping up all these little air bubbles and off gassing and breathing those in. Maybe not having the right detox change to clear them. So all of our habits are not aligned to.

I work on agricultural and farm and once a month I hurt myself. So, inflammation is the best thing I could do to fix it To. Now, this chronic ongoing everyday inflammatory insult and my body is constantly trickling, trickling, trickling away and the AP 44 is now over doing it and now and also living longer. So the body is exposed to this for longer, which means cognitive decline sets in for a larger percentage of people, cancer set in for a larger percentage of people. Cardiovascular disease, which is rooted in inflammation, sets in for more people because we're there for longer for that exposure to happen to eventually lead to the disease.

– Yeah, such an important point for for inflammation, the theme of this conference. And we have another theme of the summit sort of along the same lines. Is the integration of body and mind and on the mind side, it, it sort of resonates with me what you're saying about how, how stress ancestral e we were evolved perhaps to take care of acute stress is, and then, you know, the lion would attack and we'd run away or we wouldn't and we'd survive or not. And we deal with that in our body.

Our DNA is designed to handle that. We've evolved to handle that. But today, The stress is low grade, constant stress that we're, we don't have the tools necessarily to do that. What, what genes are associated with stress? Are there, are there markers for that?

And psychological uh measurements we can do with the DNA as well? – Yeah. One unintentional blessings. Remember what we said. We met with these 7000 people.

We didn't know this was gonna happen, but we, any data we could find, we kept collecting and collecting and collecting and not knowing what we're gonna do with all this stuff, right? And one thing we're able to do was because we met everybody, we understood their mood and behavior, how they behaved and we understood the people that would complain about stress or anxiety or depression.

What genes drove not the problem but the neurochemicals that lead to that behavior. So it's very clear what neurochemicals do, what job. It's now very clear what genes drive a few things, the anticipation so the production of the chemical, the moment, the binding and then the clearance, the duration.

How long did it last? And we also started document recall. How do you remember things, people remember things differently in terms of their emotional weight and value.

And so I can give you a few scenarios of how we see stress. There's some people for whom their brain derived neurotrophic neurotrophic factors. BDNF. And so the primary like, you know, published meaning of that is they don't do a good job of neural plasticity, brain development. And so they may not recover from concussion that well. Right. That's kind of like the baseline thinking.

It dramatically affects mood and we only learned this because we studied these 7000 people. So what does it do? The people that are suboptimal for BDNF tend to give things a lot of meaning a lot of weight.

So when you think of that shell shock, hamster wheel spinning in your head, I can't sleep at night because I'm lying here thinking I shouldn't have said that I should have showed up five minutes earlier. Oh, why did I do this?

That overthinking, overthinking, overthinking, giving things a lot of meaning lawyer's letter in the mail. Do I say I got it? But right now I'm busy, I'm going to do this at six o'clock or my day is over.

Don't shut off the phones. Nobody call me secretary. Please turn off my email. What which what's your reaction? Right. So now how you perceive is based on the neurochemicals of your brain that cause you to think about the same exact context in very different ways. And I can give you 10 more scenarios like that.

– No, that's wonderful. That's exactly what we're getting at and, and based on this and the 7000 people, you, you, for, you formed a company that specifically looks at people and, and, and does DNA analysis for people. And I guess one thing people always ask about with the analysis, maybe you could talk a little bit about it is the difference between snips where people do uh sort of a low cost 23 and Me vs The whole gene sequencing beginning to end. And I think that's still pretty much just done for research. But what are the trade offs for that?

And, and how does that go? – You have these 20 some 1000 genes that make up your genome? And I can tell you that one of the things that again we learned coming from the outside in is we have to get rid of a lot of the noise.

So there was this question and we still get this question. How many genes do you test for? Oh, I test for 1000 I test for 2000. We do a whole genome sequence and like, oh, he's giving me a whole genome sequence.

Stress, Mood, and Brain-Related Genes

And it's only $100. More simple question. How much did it change your life? That's all that matters. What's wrong with me and how do I fix it? That's really what people need to know. Right. Or what's coming in the future and how do I prevent it? Those are the two scenarios you need.

It's not, here's an encyclopedia. Hopefully, one day we'll know what it means that's not useful. So, what we've learned is that going back to your very first question of what's the root of all?

We learned that innate cellular health, maintaining the health of the cell, avoiding and preventing and treating inflammation, not being inflamed, which is where health is. That's how you live in health.

There's a few systems that can lead you to that four months and we mapped that out to a t innate cellular health, which means detox and antioxidant pathways.

So, Bluetooth ion methylation, oxidation and Glue Khurana Dacian, these four systems that sort of support cellular health brain. How do you perceive the thing you asked about stress, everything about mood and behavior.

And then we look at diet nutrition. So what are the things that you may be eating that are off, right that are causing you to be inflamed? And the last bit of it is innate hardware like you talked about a pro e indo thallium, the inner lining of the blood vessel. You know, what are the things that we would normally call risks that are actually just a hardware problem that this is the thing that you're now putting that load onto.

Right. So, between these, there's really about 90 to 100 genes that matter in these core systems. And if you can focus on those, not only your testing results become so much more accurate.

You know, Dale Bredesen, well known guy who works on Alzheimer's in his book, he said something about, I don't use 23 to me because it's only like 65% accurate.

You know, part of that is if you're looking for a giant data dump of snips, you kind of lose accuracy as you go along. So we try to pare it down to what actually matters that and then allows us to also test for more with less.

So rather than here's a snip. What are the snippets, a spelling mistake? So gene is thousands of letters long in that gene A T might be A C and now that gene acts a little differently.

So the instruction is a little broken. There's also something called an insertion or deletion, meaning that there's a

whole paragraph missing, forget about a spelling mistake, right?

There's a chunk of the gene missing or there's an extra paragraph that's being repeated. Now, imagine reading the book and the outcome of having an extra or missing paragraph.

There's also something called a copy number variation. You don't even have the gene, forget about the snip or the end, you don't have it or you have an extra copy. So by doing less, we're able to test for more with that less, which means these extra variations, which are really impactful.

And we're also able to interpret genes in the context of how the human body works, meaning pathways systems. Not as you're probably used to in genetic testing. Here's a list of all the genes and what version of each one you have. That's not the way the body works.

The body is in 22,000 individual instructions, their systems and pathways that we already know the endocrine or hormone system. There's a cascade for how we make hormones and how we clear them and how toxic they are not toxic they are.

So if we start with human biology, we already know that really well, then reverse engineer what genes actually make a difference in each of these areas.

That's all you really need to understand. The rest of it is really good for genetic conditions. You know, a gene switches turned on which equals a problem directly.

That's a blip in healthcare. 90% as we know like actually, 90% is chronic disease. According to the CDC, 90% of our $4 trillion dollar health care budget is spent a chronic disease and that's where we're trying to sort of support and help. So, um yeah, so that's what all I would say about. That is a big full whole human genome sequence.

Like let's run the whole thing. Great to have that data sitting there to use in the future. No point doing it now because I think within five years genetic testing is gonna be free.

You know, the price keeps getting lower and lower, lower. So there's no point you having much of data that is dumb, dumb data. You have to be able to ask the right question and use it. You have to do something that's functional in nature. Functional testing as part of the way the body works. Not a bunch of genes because that's not what the body does. – So to emphasize, then um the, the epigenetic, the EPA genome, DNA methylation, some of the other guests have talked about that and that response to lifestyle and programming in these DNA methylation clocks. But the fundamental, the basic DNA drives everything and sets the sets the stage for what food we should be eating, how much exercise we should or not, or how our body responds to these things.

How DNA Testing Works and What Matters

And that's, that's really the DNA analysis. Tell gives us a foundation where we can start and planning our, our lifestyle and approach to the way we program our Epp Egy Gnome as we go through life right? – And yeah, I think you're exactly right is that you're constantly making choices about everything.

So what's the right choice? Don't guess the epigenetic load which is truly what triggers them. So you could be born with the worst hormonal structure. Doesn't mean you're getting sick, you could be born with the best hormonal structure doesn't mean you're not getting sick.

Same thing with cardiovascular, same thing with the brain, the epigenetic load has to be there to trigger the problem. When we're talking about chronic disease, you're not born with diabetes and breast cancer and all these things. Why did it all happen later in life?

Because up until then, first of all, your body is resilient, it will fight, it is fighting these things for probably decades before it actually triggers uh as you age, your mitochondrial depletes, your hormones deplete and you've been exposed for far too long so that you're able to cross that threshold and get sick.

So all we're saying is what are those choices that actually lead to you getting sick if I tell you that you make a toxic estrogen. So some women are more estrogen dominant, it's very easy to determine genetically. They make a lot more estrogen than others.

And you also are estrogen toxic. There's three potential estrogen metabolites. 42 and 16 hydroxy estrogen to is good. Four and 16 are toxic and your detox pathways you talk about are off. So maybe your estrogen dominant, estrogen toxic and you don't clear it so well. So now we have a profile that points to risk but you're not yet sick.

What if that woman doesn't understand hormone disruptors and endocrine disruptors and she's breathing in the wrong things, eating the wrong things, uh, the wrong stress, the wrong sleep. And she's adding that epigenetic load.

Right. What if that woman keeps doing that until menopause where she no longer clears that toxicity because she doesn't have a mental menstrual cycle anymore.

That's where the disease sets in. Right. So, this person that was born with, this profile wasn't born sick and they don't have to be sick. They just need to know what their threats are. Their personal red flags.

What are the top five things I need to do? Right? Every system, every disease. – So what is a patient then experience as they go through the process with the DNA company, they'll come in and get a basic DNA evaluation and, and like you say, DNA doesn't change throughout our life.

So they really just need to do that once, right? And then what, what do they experience going on beyond their, how do you, how do you work with them? And what sort of guidance do you give them?

– So that was a big one because me having gone through it myself. What another thing I realized that the reports didn't work, meaning that they were accurate but they weren't useful.

They were reporting on what version of what Jean I had, then someone had to go interpret that. So part of the studying these 7000 people allowed us to do that interpretation and understand what all this means.

And so it's funny, our genetic reports don't look like genetic reports. And outwardly, a phd will tell us this is not the way it works, but we're saying this is way, this is how it works, like actually works for people, which is, people don't care about the DRD two gene and the comp gene and you know, the 1981, they care. Like I said, what's wrong and how do I fix it?

What's coming and how do I prevent it? If it's that simple meaning, I need to see the word anxiety and I need to read what's going on in my body and I need to know exactly what to do.

I need to read the word keto diet and I need to know exactly how my body handles that and know what to do about it. I need to see the word cholesterol EMEA and know exactly how, why that would happen to me and what to do about it.

So it's breaking it down into the problems we're actually dealing with and then providing the recommendations that are epigenetic in nature. It's not, I see you have elevated risk of cholesterol E mia because you have poor endothelial health and you don't deal with oxidative stress.

Well, what we've talked about earlier and your detox systems for. So we now know you have the things going on biologically that could cause inflammation here in your bad hardware. So you're more likely to get cholesterol.

So that risk profile. Now, we need to tell you what to do about it. Since we're thinking about the disease in a unique way. It's an inflammation path, not a heart disease path, not a heart disease.

It's an inflammation disease. For the most part, if we now re thought about what the disease is, we also need to rethink about what to tell you to do about it, right? Which is here some supplements that actually help you build up

that like okay Alex that inner membrane.

So you're more resilient. Here are some things that you can eat that actually remove oxidation that help you support that the support mitochondrial health.

Here's some precursors to glutathione that you can take that help you clear these toxins from your bloodstream. So if we think about the disease different, we also have to think about the solution is different.

And so we speak to all that and I would say the majority of the report is actually recommendations and less about the genes themselves. – And how much heterogeneity are you seeing in the population?

In other words, are there given that everybody has different, different basic genome and we all have may have deletions or missing or you know mutations.

But for inflammation, for example, are there certain trends? In other words, uh certain dietary trends for minimizing inflammation or is it maybe some people need to avoid carbs but other people should eat a lot of sugar or something like that. – Yeah. So it's funny because our data is a little skewed because we're seeing people that need help.

So we don't have mass population, which I think to me is even more important because we're not seeing the mass, we're seeing the people that actually got the problem And here's a really cool insight. So we have 7000 people out of them.

I would say 500 were probably just executives that wanted to be better. So they weren't necessarily sick but 6500 people with the problem they need to support.

Now, our data shows that there's a gene called GSTM- one, which is the primary glutathione driver for the gut. So think of it as your first line of defense when you're eating current North American toxic food. If you're not very careful pesticides, chemicals, drying agents, plastics, heavy metals, all of these things that are coming along with your food. How well is your gut blocking and preventing that from entering the bloodstream?

Epigenetics, Disease Risk, and Personalized Guidance

49% of the people in our 7000 database don't have that gene completely missing. 46% only have a 50% level, meaning that they're missing one copy. So only 5% of the people that came to us that had a health problem actually efficiently removed or blocked toxins from their gut.

which directly correlates to every functional medicine practitioner out there saying heal your gut and heal yourself. The reality again of our food and everything they were eating being a root cause of disease combined with our guts weren't designed to deal with that food.

Also, you're seeing the people that are complaining that I have a problem are coming in missing this gene. – Yeah. – Sorry, go ahead. – No, go ahead. I'm sorry. – I was just gonna say we did on this particular one, look at mass population data to compare and the data is not consistent.

So on the mass it's not 49%. It's a tiny fraction of that. So you're seeing that the people that have this profile, they're more likely to get everything.

It's not that you have a gut problem. You have a cholesterol problem. You have breast cancer problem. You have a migraine problem. You have a depression problem because the gut, if you're not dealing with property leads to gut, this bio sis leaky, gut toxic substrates directly into the blood leaky brain because the blood brain barrier doesn't protect you from those things.

And then you just have this general inflammatory environment and that leads to everything. – So that so interesting you could, so you could have 22 friends that live their whole lives eating the similar North American diet. One has

this gene mutation that drives inflammation. You put them both in the C T scanner.

Get a calcium score. One has a score of 01 has a score of 1 60 they basically are doing similar things but they're, they're, they're eating toxic food, but one is vulnerable because of the grains and the, and the gene mutations that can't handle the grains and the other, the other one probably has other issues that need to be sorted out there. – Having said that other issues, I wanna tell you something really cool.

So the people, the 5% that actually had both copies, some of them are still sick. So the really interesting thing that happened here again, going back to what I said before, we are wired for the habits of our ancestors, right? So when people have the double protective genes, so why did so many people don't have it? We didn't need it.

Food wasn't a threat. That's the reality. Food wasn't a threat until recently. So the people that have two copies combined this, I have two copies I detox and block toxins in the gut highly efficiently combine that with the reality of the food that we're eating, which is so toxic and requires so much detox and requires so much struggle. These people are now suffering from autoimmune conditions. – Interesting, interesting, yeah, – Really unique phenomenon. So good.

Doesn't, if you don't understand the functional interpretation, you don't know what the gene means. This and this is why we study those 7000 people because what's published about what the gene does isn't enough.

We need to see it in today's 2023 context. Like what's happening today? What's our reality today? Not, you know, 5000 year old. And that's the truth is that these people, because they so efficiently clear in detox and prevent all this stuff from causing damage and because there's so much of a load, it's triggering auto immunity, it's triggering. I need to fight so hard that I'm fighting myself and I'm making myself sick.

– Yeah, it's a great, great point. Well, one of the other things with the DNA company, I guess, versus other companies is that you don't resell the data. In other words, the personal data, how important is that? And why is that important?

Like, say, versus 23 and me, which makes more money reselling the data than they do charging for the test. But they are able to, the test is very inexpensive, but you pay for it with your privacy essentially, right? – I think, you know, the, the actual privacy issue I'm not so worried about because, you know, it's, it's really, there's some government stuff, criminal investigations, you know, really the worry to me is if you're designing your product as a data collection tool because that's how you make your money, you don't make it on the, that's the problem. Like you said, you only test your DNA once it doesn't change. So how is that a good business model, you never deal with the customer again. So they all these companies said, hey, let's, you know, help Pharma and help all these guys collect data because we know everything about these people. So now my main concern is that if you're buying tests from an industry that is designing the tool for the real customer, who is the data buyer paying them $5000 as opposed to your 300?

You know, that's what the product is designed for, for their efficiency, not yours. Which means the thing you bought isn't giving you what you could potentially get from it. If it's not designed for you, it's designed for data collection, It's not laid out and all these things that we said, pathways, interpretation, you know, insights versus just data.

How do you take it away from genetic condition to chronic disease, aging performance? You don't get any of that because it's, it's a big list of snips and then tell you what each snip means and you got a 60% chance of this and an 80% chance of this. Good luck.

That's, my bigger concern is that yes, of course, our privacy, we should, you know, there should be our autonomy, we should control it. And if you don't like your data being sold, don't work with that person. But the big concern is this underwhelming sort of unfair experience of I paid you for this thing to mine.

It and tell me everything, but you're only telling me what you're limited to because your product designed for them. Not for me. – Right. Right. Yeah, that makes a lot of sense.

Well, in looking and looking at all, all, all your analysis and your experience with all these patients, what are some things that you are? There, are there recommendations you could make generally sort of for that everybody could do that would likely help them minimize their inflammation across the board, given that they're all going to have different genetic foundations.

Gut Health, Environmental Exposures, and Privacy

Are there general things that one that most people will lower their inflammation? – I would say the thing that consistently that sort of people were completely clueless about in need of the most educational and environmental health, right? So the thing that is that extra layer of problem that we didn't have to deal with before, and it's becoming even more worse than it ever has been. You know, when you think about something like autistic Children Three generations ago, it was one in 10,000, I think kids was autistic then last generation, it was one in 500.

Now it's like one in 40. We know that the kids didn't change. We know that our DNA has been the same for 250,000 years. What changed is the environment, their exposures, what they're fighting, what they're coping with their, the same kids, right?

So this in itself should paint a picture for you of how much environmental health is a threat If we wanted that exponential one in 10,000. And I'm sure before the one in 10,000 was probably one millions.

Right. With the reality of what it was like before that. So this is how much the things that you're breathing and the things that you're eating and the things that are touching your skin are making us sick that you don't even know the things that are supposedly safe, which may be in the, you know, in a test tube or a Petrie dish come out as safe.

The reality of how your body works is very different than that Petri dish. And so where do you get your cleaning done? What chemicals are using on your countertops?

What's in your lawn? What pesticides are you using? You know, what was your food grown in? Right. Where do you, what kind of mattress you're sleeping on? What's in your air vents?

This is constant, right? This is constant. So that one big thing, if you do that one big thing, there's a huge load of environmental sort of inflammatory insult you can remove, that will make you thrive.

– Why are people more aware of that? You know, people say they like the new car smell because you know, they're off gassing all these things or they, you know, I mean, it is so important and the evidence is there like you say for these things and, and the growing rates of not only autism and other, all the chronic diseases are just going through the roof. Why isn't everyone?

What's the pushback on that? Why don't we see the health care industry stepping up or any, any industry stepping up on this? – Well, we need another hour just to answer that question.

That's a whole other conversation. The reality is that your, it's our entire system, our economy, the way we live is based on this, we just of what we just described, right? And our entire medical system not the fault of the doctor. The doctor is utilizing the training.

They have to do what they can do, meaning that their toolkit is limited. The toolkit they have is go do whatever you want and when you break yourself, call me and I'll fix you, right? Versus let me tell you what to do.

So you don't need to see me. That's, that's possible. Both of those things are highly possible when it comes to chronic disease and aging. So the problem is we're using the first toolkit, which is I am trained, I'm not a doctor. But if I were, I'd be trained on when you break something, call me.

And the thing you're complaining about, I'm gonna fix that. I'm not even gonna ask why it happened Because that's not my job. I'm not training. I don't even know I'm supposed to ask.

So the tools I have available to me are only for that job. The thing that hurts my check market success is the pain is gone, whatever that thing is. And so we never ask, we don't ask why is there so much cardiovascular disease? We don't, genetically, we have bad hearts. Genetically, you have risk of no genetically, we can't fight off breathing in pollution. You know, for 40 years, genetically, we can't handle, not sleeping properly.

You know, genetically we can't handle our hormones being disrupted by the pesticides. Making our Alonso beautiful. That's the truth. But those things mean that nobody is sick If you deal with that stuff and you're saying 90% of a $4 trillion dollar industry doesn't need to happen.

– Yeah. No, I love the visual. Somebody once said about a game called whack a mole where you hit, hit the little things and that's the way modern medicine is.

You know, somebody will come up with chest pain and they'll put a stent in their heart, you know, in the coronary artery and then they'll put them on statins, they'll send them home, but they haven't done anything to correct the underlying disease.

They have hypertension, they give them the blood blood pressure medicine, the blood pressure goes down, but they still haven't changed the underlying disease or diabetes or yeah, don't get me started. We need another hour.

– It's just that it's so cool that use that analogy because we were talking earlier offline about our book that's coming out, right? Introductory chapter is called medical.

– Okay. – Literally said that this is what's happening right now, right? – Yeah. Yeah. Tell us, I think by the when this summit is live, tell us that the name of your book, it's I just pre ordered it on Amazon myself so I can't wait to get it. It's available now and will maybe even be out by the time we have the time this airs – Right after it's coming out in me.

So right after the event and the DNA ways. So we, I mean, it wasn't my intention to become an author.

Book Launch and How to Follow Kashif Khan

But what I realized after speaking to audiences like this and working with professionals like you that are doing such an amazing job creating that advocacy is how little people realize how much they can gain from their genetics and how foundational it is.

And so I thought I need to tell the story in terms of, you know, how it changed me, you know, my, me, my niece, my mother, you know, my friends. And why did I even go down this path?

And so we did write a book about it. We're working with Hay House is an amazing supportive publisher who loves what we're doing. And so it's coming out and supposedly from the time this goes live a month later, so – Great. Yeah, I'm excited, I'm excited to read it. Well, I want to respect our time here for this session and how, how can people follow you, Kashif and follow you on social media or find you, maybe you could repeat your website online and any offers you want to have for people. – Yeah, I would say you know, don't go directly to the website and just pay retail.

Let's let's create a special offer for everyone here because I appreciate and respect that you're taking this time to learn, right? And I know that inflammation is the reason you're here. So let's work on that together and let's help you interpret for that purpose. So what I would suggest is the thednacompany.com/inflammaging.

And maybe, well, that's a complicated one to spell so well, maybe put that in the notes somewhere. So thednacompany.com/inflammaging And that's first of all, we want to give you the longevity report for free. So the DNA test, you'll buy the DNA test. We have an additional report called Longevity, which speaks to cognitive decline, inflammation, bone health, brain health, all of these sort of outcomes of inflammation.

So we're gonna give you that and we're gonna get that for free and we'll also host an inflammaging masterclass so

that you can come with your results and we'll speak to what to look at and where you should focus because it's hard to deal with everybody, you know. So, well, at least as a group call will get on as a group on this webinar and we'll, we'll teach you live, I'll be on and we'll say here's how we focus on your genes for this problem in this purpose.

So thednacompany.com/inflammaging. And to answer your question about social media, I'm on Instagram at Kash Khan officials. So Kash Khan official and a lot of this type of stuff. I'm going on rants every day complaining about the world so you can learn more there.

– The master class sounds great. I want to attend it. I'm gonna be there my kids in the mail, so I'm excited to see how the results are and everything. I'm gonna try it also.

Well, thank you so much Kashif for all the. Thank you for spending time with us on this program today. And thanks again for the, for the wonderful work you're doing in this space.