

Real Health Podcast

Brought to you by the Riordan Clinic



Episode 61: Using Genetics to Guide Health Choices

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Intro: This is the Real Health Podcast brought to you by Riordan Clinic. Our mission is to bring you the latest information and top experts in functional and integrative medicine to help you make informed decisions on your path to real health.

Dr. Ron Hunninghake: Well, welcome everyone. This is Dr. Ron Hunninghake. I'm the Chief Medical Officer here at the Riordan Clinic, and we're having another episode of the Real Health Podcast. And I'm very thrilled today that our guest is Mr. Kashif Khan.

Dr. Ron Hunninghake: And Kashif, he's an author, he's a speaker, and I like that he's a visionary entrepreneur in the field of DNA and epigenetics. And so today, we're going to be talking about how epigenetics has the possibility of revolutionizing our health choices. So let's talk a little bit about that. People have heard that DNA and genetics is the key, what's the missing piece here? What does your company have that is going to help people understand themselves a bet better and achieve a higher level of health?

Kashif Khan: Well, I think everybody can ask themselves, how much do you understand yourself? Have you used your genetics as a tool? The answer is typically no. Because the tool was too hard to use until now. And this research was being funded somewhat disease-centric, like, "Hey, you've got an 80% chance of Alzheimer's, good luck." Is that really going to drive the needle on my health outcomes, right? And that's why people shied away from genetics. It's more like, "I don't want to know."

So what we learned is that's genetics. Here's what version of what gene you have, and here's a risk that it may point to. What we built is what we call functional genomics, same as medicine versus functional medicine. Medicine is, here's a diagnosis and here's a pill. Functional medicine is, why did you get sick in the first place? What did you do wrong? What did you eat wrong? What did you smell wrong? What lifestyle choice was wrong?

So same thing with functional genomics. Okay, we see a risk for Alzheimer's, but what is the action plan? Is it insulin-based? Is it inhalation-based because of your bad detox and what you breathe? Is it because of your anti-inflammatory response? Is it because of your lipid transport? So now we can actually build a plan, looking at the biochemistry of the body, that aligns to whether there's a problem you're trying to solve or just to live a healthier life. That's actionable, as opposed to this, "You got 80% chance of Alzheimer's. Good luck." Which is what people think genetics is. So it's gone far beyond that now.

Dr. Ron Hunninghake: Yeah. I used to work in a doctor's office where we had a program called Well Plan, and it was the beginning of functional medicine. It was taking and doing assessments of people in terms of their diet and did they exercise and how did they handle stress. But from what I understand, with this information you can go much deeper and get into much more of a detailed understanding of each unique individual's dietary factors, metabolic factors, detoxification pathways. Is that going to be more than what people can understand or is this information hard to get to?

Kashif Khan: So the majority of genetics we don't need to know about. In terms of how do I make a change in my functional pathways, hormones, brain chemicals, metabolic pathways, like you mentioned? Should I be a keto diet? Should I be vegan? All those questions, that stuff is actually really easy to understand. And that's the biggest part of healthcare, chronic disease, things that we don't need to have that we all have because we don't make the right choices.

So some of those choices are obvious, some of them are counterintuitive. There's some people where we have to tell them, "You should not be doing cardiovascular exercise because it's going to cause you cardiovascular disease." Counterintuitive. But we don't say that to everybody, we say that to some people.

So really, what are we saying? Your genes are instructions that tell your cells how to do all the jobs that they need to do. So there's 50 trillion cells that make up this body that we walk around in. Each one has tons and tons of things that it needs to do. Heart cells read the heart instruction page, liver cells read the liver instruction page, and they go do their job. What we're able to identify is if the job is not being instructed properly, which job? Is it that there's a certain gene that instructs, for example, detoxification of the gut, and maybe you have the bad version of that gene. So we now know that your red flag and the thing you need to prioritize is what's going in your stomach. And maybe somebody else doesn't need to prioritize that.

Not that we should all eat garbage, but you get the point. It's that we now know what to focus on. So if you now know what to focus on, it becomes actionable. And that's how we think of DNA. It's not a gene equals a disease. It's more a gene equals a job that your body does. And if you understand the job, you know all the potential problems that could come out of that.

Dr. Ron Hunninghake: So the Riordan Clinic at one point was called the Center for the Improvement of Human Functioning. And that's what you're saying, is that if we understand functional genomics, we can understand what makes us as a unique person vulnerable, and what we can do about that vulnerability so that we don't step into the mud, so that we stay out of the bad habits if we know more about our genes. So maybe could you give us a real life situation? I understand the situation with your niece, she had a lot of anxiety, so how would functional genomics be of assistance to someone who's dealing with anxiety, let's say?

Kashif Khan: So her story is the reason why we went from a research company to a public-facing, we believe everybody needs this, right? So we were a research company, we were learning about the genome, partnering with other healthcare companies, developing insights, saying, "We could help with

diabetes, we could help with whatever." But eventually it was like, "No, everybody needs this tool in their hand to self-serve."

So my niece had an anxiety attack. She lives with my mom and my sister, and she collapsed and couldn't breathe. And I went over there called a friend who's a pediatrician, and said, "Yeah, sounds like a classic anxiety attack. But it also sounds like she's feeling better now. If it happens again, let me know." So it happened again. And when it happened again, this time my mom called me frantically because my niece fell over and hurt herself, and they thought that she broke her leg because she couldn't walk.

So I call my pediatrician friend, he gets me into a clinic and we spent a long time there, blood tests, X-rays, et cetera. And the short answer was, "If it happens again, let us know."

Dr. Ron Hunninghake: Oh man.

Kashif Khan: That's literally the same. And at that point, I knew what that meant. It meant that if it happens again, she's getting a prescription. And there's an anxiety condition that needs to be managed. So I thought, "Okay, I'm going to dive into her DNA and figure this out." Because I had her genome sequence, and I just didn't think about anxiety at that time. And just like everybody else, I'm not a superhero. I got busy and went back to work and I didn't do it.

So then fast-forward, my mom calls me again, crying, saying, "Your niece has run away from home." And this is shocking because if you met this girl, sweet, innocent, completely out of character. You would never think. So I head over there, she's literally standing outside because that's it for her, is running away from home. And I asked her, "Is it a bully? Is it social media? What's going on?" And she didn't know. So she was running away from that space, that feeling. She didn't know what to do.

So that's when I literally had my office email me her report right now. I'm in the car with her looking at it. And I did exactly what we just said. I didn't look for anxiety. I looked for what are the jobs that her body's not doing well? And what I noticed was that her hormone cascade was completely off, meaning that the beginning of the menstrual cycle is when you have the least hormones, and she was falling off a cliff. She didn't get to zero, she went to negative 100.

So then I called my mom and my sister. I said, "Can you tell me about where she was in the menstrual cycle at the time you called?" And I noticed that they were calling me like clockwork monthly. It was every 25, 30 days approximately. So they said, "Yeah, you're right. It was right at the beginning of her cycle that this happened. The day it started, or a day or two in." I said, "Okay, hormones. Let's park that for a second. Why did it start now? Because she's had her menstrual cycle for over a year."

This happened during peak COVID in Toronto, which had one of the worst lockdowns in the world, in the winter. Where she was indoors and hadn't been in the sunshine for five months. And I then looked at her vitamin D pathway and saw that ... The metabolic pathway for vitamin D is more complex than any other micronutrient because it's so important, but it's also potentially toxic if you have too much, so your body manages it with very careful three steps. One is D2 needs to be drawn from the sun, converted to D3. There's a gene that does that. You then need to transport that active D3 to the cell. There's a gene that does that. Then you need to then bind it at the cell to actually use it. There's a gene that does that. So that allows your body to manage levels better.

All three of these jobs, she did horribly. Didn't metabolize, didn't transport, didn't bind. So she needs a lot more vitamin D than regular people. And she needs a consistent drip, not just your morning shot. So then hormones are off. This key other hormone, vitamin D is actually a hormone which regulates so much of your body is also off. Why did it express as a mood issue?

So dopamine is a chemical that allows you to experience pleasure, and it also allows you to experience reward, satisfaction from work. The DRD2 gene determines the density of the receptors in your brain, so to what level of intensity do you actually experience pleasure from the same exact act as the person standing right next to you. She has the lowest possible density. Then there's the clearance of dopamine, which is triggered by a gene called COMT. That once you're done with that pleasure you need to go back to normal, so COMT comes and gets rid of the dopamine for you. She does that super fast. She so feels it way down here, and she has the fastest possible COMT gene, so it doesn't last long enough.

So she was already teetering on, "The world sucks, nothing feels good, I can't get no satisfaction." Then you take all my vitamin D away, so my brain now has this key hormone missing. Then you put this in the context of my hormone cycle where it's at the worst possible ... I'm going to have anxiety on that day anyway. And it was triggering this catastrophic perfect storm.

So what would've happened is a prescription, and she would probably still be on it today. Instead, what happened is I understood the biological failure, not the condition, not the name it was given. And all I did was give her high dose vitamin D, 10,000 IU in the first week of her cycle, and then 5,000 and then 2,500 maintenance. And we cycled that. And even that was split three times in the day. It wasn't one dose because she doesn't transport and bind efficiently. That was one.

Second thing I gave her was L-theanine to boost dopamine. A simple supplement you can buy from any store. That was it. After that, this problem has never happened once again. Never once. And she would've been an anxiety patient still today.

Advertisement: There's a lot more to this conversation and it's coming up right after a quick break.

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Dr. Ron Hunninghake: Yeah. Another good example that while you're talking, the whole story of methylation is a big factor in this. And my wife, both of her parents had the MTHFR 677, and so she had over a 70% reduction in this particular gene that was necessary for her to process folic acid properly. And because of that, she never could get the right neurotransmitters. She would oftentimes be depressed. She had fibromyalgia-type stuff. And she ended up getting breast cancer because she also could not detoxify very well.

And so just by correcting the B vitamins, getting the right amount of methyl folate, also some B6 and some B12, she is now a 22-year survivor in much better shape. Now, it wasn't just that quick. This is where I think it's nice to have, we refer to our patients as co-learners, I'm working with them. I'm learning about them. They're learning about themselves. And together we form a team where we can sort through this material and help the co-learner find the right combinations of nutrients that would fit their genetic makeup. So I assume that's similar to what you're doing with the DNA way?

Kashif Khan: Exactly. So even within methylation, it allows you to be so precise. So even when you say, for example, B12, okay, is it methylcobalamin? Is it adenosyl? Because there's genes that will determine not only B12, but what version do you need? There's a gene called FUT2, F-U-T-2, that will determine do you actually need your B12 sublingual under your tongue because your ancestors didn't eat beef, so they never developed the ability to metabolize B12 in their gut, and you're taking a B12 capsule and

you're just peeing it out. So we can get really, really hyper-precise using the genome, not about everything, but about some of the most impactful stuff.

Dr. Ron Hunninghake: Does your test results go into this in terms of not only what particular supplements or what types of foods or what types of activity, but are you able to, from that person's genomic report, are you able to break it down like you just said, and give them a specific prescription?

Kashif Khan: Yeah. So that was one of the key things that I learned. Because keep in mind, the reason why we're doing this is because I was sick and I used my genome to heal myself. So I also went through the experience of using every genetic test and seeing how hard they were to use and how-

Dr. Ron Hunninghake: They are hard.

Kashif Khan: ...there was a lack of action. And unless you knew somebody like yourself that could interpret it and figure it out and tell you what to do, it was really just gibberish. So what we realized, there's two things. We need to make this functional. So it's less about the disease, it's more about the pathway, in the way we've been describing with my niece, for example. Second thing, it needs to be really, really easy to use. That's one major thing.

Dr. Ron Hunninghake: Boy, that is the major thing in this field of epigenetics is that people have a hard time assimilating it into their particular circumstances.

Kashif Khan: Exactly. And so that's where I didn't have a PhD build the reports. I designed the reports because I'm the layman that needs to understand them. And I designed them in the way that I wish they were when I started this journey, which is don't tell me what version of a gene I have, use the word anxiety, and then tell me exactly what to do about it. Use the word keto diet, and tell me yes or no, and then explain why.

By the way, also give me the science, because if I decide to spend some time and geek out on a weekend, I can. But it's got to be easy, easy, easy. And the recommendations have to be built right in. So we learned that it's one thing to tell you, "Here's what's wrong." It's a second thing to tell you, "Here's how to fix it." But there's a whole other layer of the behavior change and actually doing the work.

So after we built the reports, we worked with a gentleman named Dr. B.J. Fogg – brilliant man. He wrote the book "Tiny Habits." He runs the Stanford University Behavioral Change Lab. So he's a sort of a guru when it comes to habit change, right? So he then wrote the other half of the reports, which is, "Now that you know what we're telling you, maybe you should consider adopting these habits. Maybe you should consider removing these habits. Maybe you should consider avoiding these things." So it's written in a way where it's almost like, "Here's your game plan."

Dr. Ron Hunninghake: So maybe we should go to some basics because probably people don't know how you collect this data. And so I know I'm aware of it, but walk people through if they were interested in finding out more about their genetics using "The DNA Way," is that what you refer to?

Kashif Khan: "The DNA Way" is our book. And we just put that out because what we understood, the same thing I said about my niece and the mission, which is everybody needs to know about this. Everybody needs to know that there's an instruction manual inside you that's already telling you what to do. You don't need to go through the trial and error and one-size-fits-all, and all the failures. Do it right the first time. And so I wrote this book because regardless if someone has been tested or not, at least

they can start to think that way. And they can start to recognize by me telling my story and how I healed myself, that, "Oh, now I get what I was doing wrong and how I should actually think." So that's one.

The test itself is at thednacompany.com. So "The DNA Way" is the book, The DNA Company, and it's called the 360 test. And from there, the other thing we've done is we realize people have specific problems they need to solve. Some people just want to be optimal, "Just tell me what are the best things for me so I can live an extra 10 years." Some people are like, "My mom had breast cancer, and I don't want that." Or, "My hair's falling out, I don't get what happened." So there's problems that need to be solved.

So we have these report review sessions where anybody can jump in, and they're open to any one of our clients that has a test on their hand, where we dive deep into the reports in a group setting. And people can ask questions, like a live Q&A right there on the spot. So it gives people a lot of in-depth value in terms of I don't really need the gene report, I need someone to tell me what to do. That's really what people want. But we need the gene report in order to tell you what to do. So we've designed it really around I wish this is what it was like when I started.

Dr. Ron Hunninghake: So people go ahead and collect the mucus?

Kashif Khan: Yeah, saliva. So a kit gets shipped to you, you're literally spitting into a tube. So it's about five milliliter of saliva, a little bit of saliva. You close the kit, it gets shipped back to our lab. The lab then extracts DNA from your saliva, every cell in your body has DNA. We then sequence it. That means we're literally reading it, and in the way that we want to read it.

There's different ways to interpret and sequence DNA, so we've done what we think is important. There's certain genes, for example, that it's possible to have what's called a copy number variation, which most genetic testing companies don't test for. What does that mean? It's not just about the SNP or variant or mutation that you hear about, this gene is different than it's supposed to be. It's like, "Do I even have the gene? What if it's missing?" And most companies don't look for that. And that's so impactful.

And that happens in some of the most important pathways in our body, detox, glucuronidation, which is hormone detox and mold detox. You also see insertion or deletions, I should say, which is a paragraph or chunk of the gene is missing. So anyways, there's more to genes than just a SNP or a spelling mistake. And so that then gets uploaded into our portal where each person gets notified, "Log in, here's your results." And it's all self-serve. You can read it, you can understand it. But if you have specific problems to solve, join the group session and you can ask whatever you want.

Dr. Ron Hunninghake: Is it very expensive? Most people want to know, is it very much of an expense?

Kashif Khan: Yeah. So it's \$499, \$500. What we can do, by the way, because I value everyone putting their time in here today, and we're all here to learn, but we can create a discount for your audience. Just everyone that's listening, let's keep it within the community. We can call it Real Health, if that makes sense. So thednacompany.com is where the test is. If you type in thednacompany.com/realhealth, we'll make sure that everyone gets the discount there. Because I want to honor everyone's time for being here today. So we'll do that.

Dr. Ron Hunninghake: Well, I'm thrilled that you've been on the program because I think this is an incredibly, incredibly important tool that gets underused. We use another company, but I would like to see how yours works out. Because all the companies I've looked at, the big problem has been

interpretation and implementation. I mean, it doesn't matter how great the test is if the person, patient, the co-learner, cannot take that information and put it into their own life, their own situation. It's just information. It's not transformation. We want transformation for the better, not just information.

Kashif Khan: Yeah. And data is dumb unless you know what to ask it. And you have to ask. And we don't know what question to ask our DNA. We don't even know what what's possible for the most part. So we've done that work. And one thing I should tell everybody, the reason why we have these insights is we spent three years studying 7,000 people. So one by one by one, in clinic, we met with individuals and actually supported them through their health journey to learn what does all this stuff mean? How does it apply?

When I see 80% chance of Alzheimer's, that very first thing we said, why did 20% not get it? If your gene is so certain, what were the 20% doing right? And that comes down to the epigenetics, the inputs of environment, nutrition, lifestyle. So that's what people need to be coached on. Based on your genes, here's a red flag, now here's what your habits should look like so that you in the 20% versus the 80,

Dr. Ron Hunninghake: Boy, would this lend itself to AI? Have you guys thought about AI?

Kashif Khan: Yeah, we're doing that right now. We're literally doing that right now. So the intention is to keep making it easier and easier and easier. And in fact, the call that I was on prior to jumping on with you was with our tech team to look at some of the AI specs. And what we're trying to make it is that the AI interprets the way we do, which is not genetics, it's functional. So that you can just ask any question you want. Because keep in mind, your DNA doesn't change. It's permanent. So two years from now, there may be a different thing you're dealing with.

Maybe right now it's like, "I have no energy." And two years from now it's like, "I want to climb my Mount Kilimanjaro, how do I get my body ready?"

Dr. Ron Hunninghake: Exactly.

Kashif Khan: So now you go back to the same DNA, because it hasn't changed, to ask it a different question. How do I deal with recovery? How do I deal with my testosterone? And you can keep going back and keep going back because your DNA doesn't change. So that's why we want to build the AI, so that you permanently have access. Because you do the test once, but it informs you for a lifetime.

Dr. Ron Hunninghake: Fantastic. Well, I'm so excited you've been on our program, and I hope our audience really gets how monumental this is in terms of charting a new path towards a better, healthier life, with a greater sense of wellbeing to support you in all of your endeavors. So thank you so much, Kashif, no?

Kashif Khan: You got half of it right that time.

Dr. Ron Hunninghake: I need to get that DNA fixed.

Kashif Khan: You did pretty good. 50% is still a passing grade.

Dr. Ron Hunninghake: Okay. But thank you so much for being on our Real Health program and best of luck to you. And we'll try to stay in touch with you as this goes forward.

Kashif Khan: Pleasure. Good to be with you.

Dr. Ron Hunninghake: Thanks.

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