Dementia is NOT One Disease: Why Precision Medicine is the Future of Brain Health Transcript

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Introduction to the summit and guest

Hello and welcome to another very special interview for the Reversing Alzheimer's Summit. I am your summit co-host, Doctor Kristine Burke, and over the last decade, I've helped many patients reverse their cognitive decline.

And that's why I have co-founded two brain health software designed around preventing and reversing neurodegeneration to help both patients and practitioners be extraordinarily successful in this work.

In this summit, I'm bringing you interviews with thought leaders who can help you understand the pillars of brain health and the root causes of cognitive decline.

I want you to learn what you need to know to prevent and reverse cognitive decline and Alzheimer's disease for yourself and your loved ones. And with that in mind, I am extraordinarily pleased to introduce you today to my friend and colleague, Sharon Holzman Cohen, MD.

Doctor, her husband, Cohen, is a leading expert in cognition and neuroscience, serving as the medical director and head of research for Intel DNA. Her work focuses on brain health, utilizing Intelex Deanna's Genomics Driven Brain Optimization report in both cognition research and clinical practice nationwide.

Doctor Holzman Cohen is also co-founder of Resilient Health, where she applies a multimodal approach to treat cognitive decline. She has coauthored seven publications and a textbook chapter on neuroscience covering topics from autism to cognitive decline.

Welcome, Doctor Sharon. Thank you so much for being here. It's my pleasure. I'm so happy to have you. You know, one of the things that I have found so valuable in the dementia reversal clinical trial is the intellect and reporting.

And how much information that we get that we. I think that that's that's why we built it. Because so many people were learning that they had one gene.

You know, if we for one thing and going, oh my goodness, then I have dementia and there's nothing I can do about it. And we know that there's so much to understand.

So by using genomics and you now talk a lot about that, you can get a much more precision approach so that you can hone in on what's most important for you for prevention or treatment.

If you already have memory issues. Yeah. That's so important. So very important. So maybe before we dive into the genetics piece, you and I have talked about dementia not being about one disease.

And maybe you could talk a little more about that for our audience. Absolutely. So until very recently I mean like the last 5 or 6 years, people were giving labels to diseases and assuming it was one disease.

So if there was a code for Alzheimer's or a code for depression or a code for autism, people were then assuming including physicians. Well, then that's one disease.

And then saying, okay, how do we treat this? But what we know now is that chronic disease and so chronic disease are the diseases that lots of people get heart disease, depression, Alzheimer's, on and on and on.

Chronic diseases aren't due to one gene, and therefore they're not really one disease. And that's a lot. What we're

going to talk about is people label something Alzheimer's.

But really it's about become a basket term that just means dementia, usually of late onset with certain features. But there can be so many different varieties.

Dementia as a collection of genetic and biological factors

Understanding the components is really important if you're going to improve outcomes, because one person can have one collection of components, you know, component one, seven, five and 12, and another person might have two, four, six and 23.

You know, if we were to label the genes, we don't obviously call them by numbers, but by understanding. So our work at Intel DNA, for all the different diseases that we have worked with and a lot of it is brain science, because I started out actually as a brain scientist, going doing a PhD, not a M. D.

originally, but a lot of our work has been to say, okay, what different components make up or are associated with a high risk of cognitive decline, and then knowing that and we're going to again talk about some of those components, hormone receptors and growth factors and pathways relating to removing toxins and inflammation.

And of course, but before we'll talk about lots of different things. But then the second half of that and again, this is where our team's research is focused, is once we know that a gene is associated with cognitive decline, we have to know how that gene variant works.

But what we can do about it, and that has been what we have done, which actually started to make it. I met Doctor Bredesen back in 2016, and, he was working on cognitive decline.

And I said, you know, with the genomics, we could help you so that if you have somebody and you're going, gosh, there's 3040 now, it's up to what, 50 holes that could be in that roof, that could be contributing to cognitive decline.

I can help you get a map for each person that will hone in on a lot of those factors. Yeah, it really is a map, too. There's just a wealth of information.

Okay, so you mentioned the elephant of genetic risks in the room for do we want to maybe start with that. And then we can kind of expand on how much more we can learn from someone's genetics than just that.

I think that's a great place to start. And the reason I like starting with that is I always say that ApoE4 is either is not enough or too much, depending on how you look at it, because if that's all you know, then that's not good because you might not even be at high risk.

There are gene variants that cut that risk in half and some that cut it down even, you know, even more. So there are variants and we can talk about them.

The names like coauthor, which is a longevity gene, can really lower your risk. There's a there's a gene that relates to processing the amyloid that can lower your risk.

And half. And so you might be unnecessarily scared. And that's not good because you might be someone who got a direct to consumer tool and you're 30 years old and all of a sudden you're like, oh my gosh, I'm going to get all of the primers.

And that might not be true. And first of all, we have lots we can do for prevention even if somebody is ApoE4 with other things. But the reason I say it's not enough is there's so many genes that interact that relate to inflammation and hormones and detox pathways that can double the risk or increase the risk significantly.

And if you want to understand the full picture so that you're not just scared but you're empowered. Yeah, that's so, so true. I literally just met with a patient a couple of weeks ago.

Young man in his is who has two copies of Apple E4. Mom has cognitive decline. And he was very, very worried that he had all of the beneficial genetics.

And so his Apple E4 risk just dropped like a rock. And he left feeling so much better. Still, knowing that there's work we need to do for prevention because there's still some risk that it was it was life changing having that information for him.

Absolutely. And I have ApoE4 for patients that are in their 80s that are still in the 90th percentile for cognition. So when the news came out with, oh, we should make it ApoE4 for be a pathogenic low risk state saying you will get Alzheimer's.

I was I told my patient she came in like the following week. I said you might want to write the newspaper and say, this is not true, that my cognition is still great.

So and again, she was lucky because she didn't have all the negatives associated with it and had some of the positives. But she's also worked at keeping her brain healthy.

Yeah, and I think knowing your genetic risks helps you to know what specifically are the things that you need to do as your work to prevent cognitive decline.

Now, there are some other non-Apple E4 causes of cognitive decline. Do we want to touch on those maybe as well? Sure. And some of them relate to the ones that interact.

So let's kind of start with some of the interactions. And then we'll talk about what if someone's an apple three three. So with the interactions we know for example that there are some people who have overactive estrogen receptors.

And there's two kinds of estrogen receptors. I don't want to get too technical, but there's the ones that cause all the pro estrogenic effects. The people who can get more fibrous fibroids and heavy periods and things like that when they're younger.

And then there's ones that are in the brain and in the mitochondria that are, they're related to estrogen, but they're also really responsible for quelling and stopping inflammation.

And people who have overactive of the estrogen receptor ones, the ones that are the pro estrogenic and underactive of the inflammatory, they can have three times the risk of cognitive decline even without a boy.

Four but then if they combine it with the whether you say Aibo or Apple is kind of like tomato tomato that yeah, the apple before when you combine it, it can get bigger 4 or 5 times the risk again depending on how many of these things.

And that's a topic that I know that most of the individuals who ever read more about cognitive decline know that in the absence of estrogen, many patients with Alzheimer's get worse, worse inflammation in the brain.

So now we understand in particular who are the individuals at highest risk for that. But I had a patient and she just had me. She had other things with it.

But was it three three but had what we call that estrogen receptor haplotype.

ApoE4 and other genetic risk modifiers

A haplotype is just a grouping of of gene variants of snips. And she had retired early. She was an instructor that taught teaching across the country.

So at a high level job where she had to stand up in front of people, she had retired. Once we figured out what was going on, we got her cognition back to being in the completely normal range.

She retired. She did eventually retire again so that she could spend more time with her grandchildren. So that's a really important factor that is important whether or not you're in a belief.

And I think that's such an important point that even if you're already experiencing decline, it doesn't mean that you're on a one way road to this progressive degeneration.

We now have so many options for intervention, and I know we both do this work all the all the time. Yeah. Another really interesting one that fits in with what I know.

We teach all of our patients is a growth factor for the brain. So there's a growth factor. Bdnf stands for brain derived neurotrophic factor. I always like to make little, nicknames for my genes.

So I kind of call that the fertilizer gene. And without it, you can't stimulate the brain, new neurons and new synapses, so you don't have the fertilizer to grow the memories.

The memory hookups in the in the brain memory center of the hippocampus. And when you have even one copy of this grouping of BNF snips, it's almost three times the risk of Alzheimer's, even if you're a boy three three.

And if you have two copies of it, they can't exactly judge the risk because there weren't enough. There's only 4% of the population that have two copies, so the study couldn't sort it out.

But that's super important to know because there's so much you can do. The problem is you're getting stuck in your pathway. So this growth factor, we make it in kind of a storage form.

And then you're supposed to take off kind of the lid, which goes as mad as Probnp you take off the probe part and then you then you have the kidneys. So you then you have the probe DNF.

It's not good for the brain to have a bunch of that building up and not have the form that helps with the fertilizer. Well, knowing that there are things you can do, you can do Astiz Anthon, you can do green coffee, bean extract, but even intense exercise is amazing for these people because they've shown that it can completely normalize that risk.

It can make the mature Bdnf go actually even slightly higher than the people who don't have it. So for these people, I literally write an exercise prescription.

And if they're not exercisers, I work with them because I say, look, this is almost the same as being an ApoE4. You don't want to ignore it. And so we give them things they can do with supplements.

But lifestyle's super important. I think a really good third example of cognitive decline. I could go on and on and we'll just see what kinds exist. But a third example are people who their risk is really they're not getting enough blood flow to the brain.

And that's a huge category that I'm sure you've seen that I still remember in the first study that that was done with, doctor tops and, thank you, Doctor Gregson and Doctor Hathaway, and I can't remember whose patient it was, but the first time they had a patient that was an apoa three three and their history was they were getting cognitive decline.

That was more when they were flying over to another country. They traveled a lot internationally for work. And when they tried all the things they had read the end of Alzheimer's and tried lots and lots of things, and it wasn't getting better.

When the genomics came back, the answer was so clear because they had problems where their blood was too thick, something called factor two and factor five.

They were hyper coagulant and so that thicker blood made them not get enough oxygen when they traveled an

airplane because the oxygen is lower. And so for them, a ketogenic diet and all these different supplements was not the answer.

The answer was national, which helps to give more blood flow to the brain, and lumbar kinase, which is, a digestive enzyme, essentially that helps break up fibrin clots so that your blood is not so thick and has great benefit for vascular things like strokes.

So those are some of the kinds of things. And the reality is there are many, many dozens of gene variants that can increase or decrease the risk of Alzheimer's.

Lots that increase not just 20%, but sometimes 200%, 300%. So knowing those, and when you take the map of which are your top ten, you can have so much better ability to both again, prevent or reverse, hopefully.

Again, a part of it depends on when you get at it and how what's going on. But to improve your cognition. Yeah, that's so fascinating. I think that we now have so much capability of being able to really personalize and be precise that, you know, our precision medicine piece with how an individual needs to be treated differently than everyone else.

And that's been one of the I mean, really, it feels magical that what we feel like we have, the empowerment that we get from the Intel DNA report is knowing things that are unique to that person and maybe rare in the general population.

So it's not something that you would have ever done. Like, you know, the one that pops into my mind not to get too technical, the next one where they can't recycle their CoQ10 or their vitamin E, and you need to use a different form because they get way more benefit from from that different form of CoQ10.

Like, how would you not. Right. And I think that's a really good topic. We can a little bit the role of oxidative stress is something we haven't talked about.

But if you ever think about it, that might be fun to explain that to our listeners. If you ever think about it, if you have an apple that has its skin on it, it doesn't turn brown.

And that's because all the apples antioxidant ability and most fruit have the antioxidant ability in their skin, so that prevents aging. But if you cut that apple open, then it's going to turn brown and it'll shrivel up much, much faster.

I mean, it could last weeks or months without that. And that's because that inside gets exposed to oxygen from the air, and it doesn't have all those antioxidants.

So that's what happens. And how come we don't age? How come we can last? Still looking pretty good. I mean, you can tell the difference between an 80 year old and a 20 year old, but how come we can look pretty good 50, 60, 70 years later?

And it's because we have all these antioxidant pathways which are anti-aging pathways both inside and out. And if you think about it, meat, when if you put out a piece of chicken or a piece of beef, it doesn't get the same shrivel up like an apple in the same time period, because animals, including humans, have antioxidant abilities throughout their tissues.

So there are a lot of antique things that can go wrong with our antioxidant pathways. So we have a bunch of them. We have ones that relate to CoQ10. We have ones that relate to vitamin E to glutathione ion, and those are amongst vitamin C, glitter, iron, CoQ10 and vitamin E are our and biggest antioxidants.

Hormones, BDNF, blood flow, and oxidative stress

But if you have problems with 2 or 3 of those pathways, then you're going to need to do a lot more to protect your oxidative stress than somebody who has all those pathways working.

So that's another pattern that we've seen on some of the people who have cognitive decline and premature aging. And sometimes the first sign of it is not just cognitive decline.

I had one person where her antioxidant pathways were really her big issue, where she presented with muscle pain and dropping things when she did present with brain fog.

But it was also she was a makeup artist, and she would find that by the end of the day, she would get these not even that far into the day. By 11 or 12 in the morning, she would get these horrible muscle cramps and drop her her brush.

She'd been an actress before, so she didn't realize that she had these issues until she was doing repetitive movements. And when we got her genomics back, she was in the 4% that really had problems with that CoQ10 and then cure one, which again is a really big antioxidant pathway.

And we gave her the right form of CoQ10 and vitamin E, and literally in 48 hours, she was able to control those muscle spasms. So it's it's really an inside look.

And it's so much fun to get to know yourself. Yeah it is it really is. And see where you're kind of empowered and where you're a little bit vulnerable because then you know what you need to do.

Yeah. And you know and I'd say stress some people listening may have heard of Clotho which is Clotho is the number one longevity pathway. All clock though is what gives people more longevity, better ability to cope with oxidative stress.

Clotho regulates the master switches for all the antioxidant pathways. And so when somebody has ApoE4 and has the right Clotho type, because there's one type of, you know, it's a combination of two genes and there's one type that's the best way to have it.

They can cut their risk down by, instead of being a risk of three times, increase risk of Alzheimer's, then they have 40% less risk of Alzheimer's, almost 36% less risk.

So it just shows how important some of those different. So if you don't know your genomics now I'm going to encourage people if you have cognitive decline in your family, I think that doing genomics is extremely worthwhile or if you're having cognitive decline or anything going on, but if you're just kind of going, what can we do?

Because we want everyone listening to go, what can we do for our brain? Think about, what are you doing to control your oxidative stress? Like, you know, and again, the broad categories would be things like lithium ion vitamin C.

Yeah. And I think one of the things that your platform is it makes it to me, I think so special is that it's very actionable. It's not just up here you go.

Here's all your statistical risks and good luck with that. And it's really like these are the interventions that you can potentially do to modify this risk that you came equipped with.

So it's feels to me much more empowering as a tool than others that I've worked with, which I really appreciate. Well, that was by design, just to give you a little history in our practice, because I had started out as a neuroscience.

So I went again. I went my interest. I went to Harvard to do a PhD in neuro endocrinology. So I was really interested in how the hormones and everything interact with the brain and, you know, sexual, different sex specific differences and all those kinds of things.

And then I decided I wanted to spend my life with, not just one topic, but much more broadly. And I became a family physician, kind of the opposite of a PhD specializing in people birth to death.

But I always kept my interest in neuroscience. And so in our practice, we were looking for a genomics tool that would help us with brain science. And brain science is the most important field for genomics because there's a blood brain barrier.

So you can't just go and take a blood sample and know what's going on in the brain, because you could have your inflammatory markers could be 40 times higher in some cases, like autism is an example of that in the brain than they are in the blood.

And nobody wants to go give some CSF, some they don't go, I get a spinal tap. And so I was looking for a tool, and there were a lot of tools out there for some neutral genomics, some pharmacogenomics, but nothing that really helped me understand why someone has depression, why someone has Alzheimer's.

The autism work came because some people who are in the field of autism said, can you do what you're doing for cognition, for autism? And so why somebody has these things going on and and that partially has to do with most of the platforms out there were developed by PhD nutritionists or PhDs.

And so we're really proud that we have built this platform with input from many, many physicians, and a strong research team to make it useful for issues that were not previously addressed with genomics.

And any one platform. And that's where, that's where we actually spent millions of dollars. And a lot of years is not just listing the genes. That's pretty quick.

I can go, you know, you can go do an AI search and find a bunch of lists of genes that been associated with Alzheimer's. But where the research comes in, and I'm dual board certified in integrative medicine and family medicine, is figuring out how does that gene variant affect, like, what protein are the downstream pathways and what can you do about it.

And that's the important part for making the map and then making sure everything was referenced so that clinicians don't have to just take my word for it.

They can follow the train of thought and understand why we're making. Yeah, why we're saying this is a way of addressing this pathway. Yeah it is. It's a really fantastic, amazing work that you've done.

Thank you. Yeah. Think well and I'm super excited about our collaboration too with, with Nora because we're bringing together those two sides. And I think it's really going to be spectacular.

Yes, I, I'm excited about that as well. I think it will bring cognitive repair and cognitive improvement to so many more with our collaboration. I tried to add to because there's just so much that we can do that we know from your work and then so much that we can do from the application side and bringing them together is going to be really amazing.

Absolutely. And and your ability to train people is going to be as well being able to train other clinicians, because I think we both get that all the time.

It's like, how do I get the results that you're getting? And so I think it's going to be a wonderful collaboration. Yeah. Thank you. You know, one of the things so we've talked about how knowledge of our genetics can help us to know what we need to shore up and maybe how we can mitigate vulnerabilities that we came in.

But there's also another layer where our genetics can help us identify what other tests might make sense for us to do. Can you talk about that a little bit?

Yeah. So, sometimes in functional medicine or integrative medicine, I'm going to say the old way, there's no such thing as old way. And functional integrative, because it's a relatively new field would be to do a lot of different testing, new, you know, new nutritional testing, doing maybe mold testing in different toxin testing and, you know, detox pathways and lots and lots of different labs.

And that can get quite expensive. And so one of the ways genomics can help is kind of point you in the right direction. So for example, there are some extensive detox pathways, specific ones for pesticides, specific ones for colitis states, things that relate to how you eliminate mercury mold, all those things.

If you see that someone has horrible detox pathways, you do have two choices. You can just start to treat it. You don't need to do further testing, because if you know that they're really in the, you know, bottom 5% or bottom 10% of being able to eliminate these things.

And there's safe interventions like sulforaphane that you can use to help push the pathways and glutathione. One approach that I often use is to just start address the genomics and not do further testing.

But even if you want to do further testing, the genomics can help you identify what might be worthwhile. So if somebody has horrible detox pathways, then it may be worthwhile to say, well, let's see what your toxin profile looks like.

So we know more, isn't it. Pesticides, glyphosate, you know, mercury, all of that. And that has been really helpful to some of our doctors because we definitely have had cases of cognitive decline where there was one that was a previous firefighter in 911.

So he'd gotten exposed to all of this toxin stuff. And for him, you could just start to detox. I mean, the doctor went heavy into detox. The patient also had problems with not making enough of what's called nitric oxide, which is what opens up the blood vessels to the brain.

And so this patient went from dementia to doing his taxes. He had always been proud of doing his own taxes in the matter of the months with hyperbaric, which you wouldn't necessarily order for everyone.

That's not a test, but it's still an expensive intervention that you want to order for people that you think are going to get good results and detox. And so I think that the genomics can give you this bird's eye view for somebody else.

You might see that they're really, really bad at transporting and holding on to their vitamin D. So you might be like, okay, let's up your vitamin D. You might do a baseline vitamin D, you might not again.

Using genetics to guide testing and treatment

But then you'll understand why would this person I keep giving him vitamin D but it keeps dropping. Well those people might need 50,000 D every single week for the rest of their life to keep their levels up.

So it helps add sense to the testing. And again, if you know that someone has low magnesium absorption, you can then decide, do I want to start replacing magnesium or test first.

So it helps again, just focus. There's so many things that we can do. It also can help you understand some of the patterns we see on tests. I think we both use things like a neuro reader or you know, different pathways.

I'm sorry, radiological ways of looking at the areas of the brain. And it's been really interesting when you see that someone has a good hippocampus, but they're having memory issues, and then instead they have more problems in the frontal lobe or temporal lobes.

And you look at their genomics and you go that fits because their genomics is not that classic Alzheimer's hippocampal pattern. So it just makes everything cohesive.

And I think that's really important for patients as well as motivation as well as then going, okay, what are we going to do now to get it better. Exactly.

And what are what are some of the specific things like B12 is another one where so many of those people that don't have good transporter proteins, then they need to have higher levels of B12.

And so there's just a lot of risk of uniqueness. You touched on a bit the interplay between the environment and dementia and mold, toxins, infections for example.

I know that that's a broad category for our last for our last few minutes together, but maybe you could just touch on how how we can utilize because you talked about the detox genetics.

So we have that piece that how about with the infections. What might me see genetically. Well there are we have a very important infection fighting system in our body.

And because it's so important, there's a lot of different components to it. So we have we have pattern receptors that can kind of receptors. They're called toll receptors that can recognize different viruses.

We have things that kind of are the first defense. And then we have how we make an inflammatory response to infections. And all of those can contribute to cognitive decline.

But how you intervene with all of them is different. So somebody who has problems where they're making too big of an inflammatory response to infections, that can overlap with the people who get some of the really big responses to vaccines or big responses to Covid in their lungs.

For example, they might use something that resolves the inflammation like a resolving. But if your problem is more of not being able to fight the initial infections because of problems with toll receptors or other pathogen, identifying pathways, you might have a lower threshold if a person can't fight off infections.

For number one looking for those infections but boosting their immune system when they do get sick, there's lots of things from, you know, astragalus and this and beta glucan and all kinds of things.

But it also again helps you know, what to look at as a specific even if you go more deep, there are certain of these receptors that might be involved in the herpes viruses and other ones that are more involved in things like Lyme disease and gram negative bacteria and all of the different pathways.

We're not at the ability to kind of put a click into the computer and go, here, here's what to do. We'll get, you know, that's we'll get there. I do believe actually that science and medicine will get there and it will it'll be great.

But still, having these clues makes a lot of a lot of sense when we see that a lot in our autism work. And again, I know that this is the Cognition Summit, but it's still brain.

We see these kids that after they get sick, when they get sick, their autism gets much worse, or they get pandas and pans and then we understand, like for them there's, a pathway mannose binding lectin that fights yeast and bacteria that are really important in kids because their immune systems aren't as mature.

Well, then you can start testing for it and treating it. And we've had kids get dramatically better with that. You wouldn't normally just be giving them an antifungal or antibiotics, but you identified the infections they were fighting because you understood their immune system was different.

So the thing that I like people understand is blood is only one tissue in the body. And so you can do blood tests, but that's like doing a blood biopsy.

But if you have genes that affect just the brain or the just the gut or the heart or the bones, other tissue, you're not going to get that information from just a blood test.

You have to. But because our DNA, you can get everything you need from a cheek swab to get your whole DNA, you can understand where someone's vulnerabilities are and then you can then specifically address it.

So if you know that someone you brought up the issue of the B-12 transporter, I personally have two copies of that B-12 transporter. And I went through a phase of my life where I became vegan for a while.

That was not a good choice for me because I wasn't replacing B12 with any extra amount, and I was like, oh my gosh, it's hard to figure out, you know what I mean?

Sometimes I'd have to kind of look for workarounds for words. And then, but my B12 level was normal by American standards. It's like 300. And then I learned what was going on and took B12 and that all went away.

So it's really everybody's different. If you know that you're somebody who has all these genes that make you at risk for cognitive decline from pesticides or from smoke or from glyphosate, then you're going to make changes in your life to avoid those environmental exposures.

And then you're also going to make changes to upregulate those genes. So one gene and again the genes are just names. That's called pan one. And I like to think of it because it sounds like almost that juice PLM like pomegranate juice pan.

One is really important for keeping your heart muscles from being oxidized, your LDL from being oxidized. But it's also really important for removing pesticides because that's how we clear pesticides.

Well, those people need to either completely avoid pesticides, which is a little, and some of the environmental toxins, which is hard. Or they can do things including drinking two ounces of pomegranate juice.

And that can increase that activity by 80%. But for somebody else they might need to get their glutathione pathway more active. And that might do better when three days old broccoli sprouts or sulforaphane.

So detox pathways are super important because even in basil, even in everything we eat, there are parts of our food that we're supposed to clear toxicants and toxins.

Infections, detox pathways, and finding a clinician

And if we can't clear the things from our body that aren't good for our body, it's really a problem. And now there's so many more of them with the pollutants and the microplastics and the, you know, and the smoke and the pesticides and the mercury and on and on and on.

And so one of the things we look at extensively at in italics, DNA is very extensive detox pathways, because again, there's a number of different ones that are different for different people.

Yeah, exactly. And you end up with what you're exposed to and what you can't get rid of. That's what accumulates in you. Right. And your detox pathways are how you get rid of it.

So really important. Oh my gosh. I mean, we could talk for another hour and easily, but we probably do need to to wrap up. I think, you know, it is so clear to me that everyone needs to know this genetic information to understand their health risks.

And and would they come powerfully equipped to do because it's not all negative, as we did? You know where we started off making our little full circle?

Is there anything else that you feel like is really important for people to take away from our conversation today is one thing. So because Intelex DNA goes into so much depth, we talk about diet, lifestyle supplements, but also medications and how genes work.

We're a different category than virtually every other genomics tool out there, meaning that we are what's called a clinical decision support tool, which means that we can't have somebody just order it unless they're a trained health care professional.

They need to be, whether they're an MD or a Dia or a naturopath, you know, or a nurse practitioner. There's lots of people who can order it, even a functional pharmacist.

But it has to be a licensed health care professional. So for somebody who wants to learn more, I encourage about how they can find someone in their area that's trained.

Trainer will be helping that problem over the next, over the next year. But if they're looking for that right now, a way to find physicians and clinicians who are trained on italics, DNA is to go to our website.

So and then click find a clinician. It is the other thing is I'd say it is more expensive than the typical genomic products because again, what they're buying is not just a list of genes, but the ability to sort through hundreds of gene variants come up with a profile that is more specific to you and what to do about that.

So again, before we ever had anyone helping with sales, we've had a research team and spent many millions of dollars on research. But to learn more, you could go to Intelex dna.com.

And it's a funny spelling, but I'll tell you how to remember it. My co-founder and I are both women, so there's two exes in it because of that, and it's an intelligent approach to using your DNA.

So it's Intel Xe dna.com. I love that mnemonic. That's awesome. And so true that it's really valuable. The amount of research that's behind it is so valuable.

Well, Doctor Sharon, this has been an incredibly informative discussion. I really appreciate you sharing all of this very important information with everyone that's on the summit today, and may listen to it in the future.

I don't think that there's much more important than understanding how you came wired. It just it just is so empowering. I know you also have a really active practice for people who would like to know how else to get in touch with you, or how they might be able to work with you and your team.

Is there anything there that you'd like to share? So we do have a practice in Austin, Resilient Health Austin I'm not taking new patients because my job is really at this point heading the research and development for Intelex DNA and actually training physicians across the country.

And we're doing lots of other exciting things. We take care of mental health with depression and anxiety and ADHD, and I mentioned autism, but we also have a women's health report with fertility and so many things going on.

So but I have wonderful other doctors that I work with. If someone does want to do genomics or see us in Austin, but we're lucky that we have hundreds of practitioners trained at this point across the country so that you find someone that is in your state that will be a good fit for you.

And if you have a clinician that does not know Intelex DNA, we do offer free training and free mentoring. We even walk the clinician through the first three reports.

So don't worry if you you know, if you have something you like that doesn't yet use it, we're happy to train them. And that's always the best to get your doctor doing it with you because they know you.

And that again, I do a lot of that training, so we'll make sure they take good care of you. And the training is amazing too. Well, Doctor Sharon, this has been so excellent.

Thank you so much for joining us today. And for you, my viewers, if you have enjoyed this discussion today on the summit, please join some of our other sessions where we continue to dive in to my passion and Doctor Sharon's solving the root causes of cognitive decline and leading you to better brain health.

Thank you so much for joining us today.