Introduction to Precision Aging

Right. And so just look like, what can I do to have, healthier air, healthier water, and healthier ecosystem? All every microbiome that I have, my skin, you know, my mouth, my gut, and looking at what you can do to minimize that.

So knowledge is power without having to go in and look at genetics. But I think it's so cool that we can finally stop guessing and going, well, I think I'm inflamed or I think, well, do I have problems with the top, the G do I, you know, do I clean up my cellular, you know, garbage.

Well like, I don't know. Right. So it's like, oh, we'll show you, we'll show you exactly where you're at. And then getting it give you the practical, targeted steps in order to optimize yourself, optimize your body, and not follow some bio hack.

This is doctor talk real talk from real doctors. Only issues that matter to you most. So if you have worried about birthdays, not being able to enjoy your birthday party because the candles were setting off the smoke alarm, then this podcast is for you.

If you're one of those people that are like, oh, I'm just getting old. No, stop thinking that way. It is with glee that I welcome Doctor Kelly Halderman.

Welcome, Doctor Halderman. Thank you so much, Doctor Debbie. It is such an honor to be on your podcast. I have become a huge fan of all your content, and everything you're putting out in this podcast is such a blessing.

So thank you so much for having me today. Well, listeners are going to love her. And welcome to Vitality Made Simple. You know, this is the podcast to equip you to feel better, look better, and to enjoy better relationships.

Oh my gosh, is there some great stuff to do to learn today? I'm your host, Doctor Debbie Osment, and I just thank you, thank you, thank you for being here.

So I want Doctor Halderman to tell us her story and how that sort of changed her trajectory after going to medical school. Yes. So I did start off my journey in the medical field.

So I graduated from medical school, I did an internship and found my practice really was doing great. I scored in the 99th percentile. My boards, like I was like, this is it.

This is this is what I strive to do. I paid all that money to do. But when I was on call one day, I suddenly got a tumor. So that's where it's like you get a migraine and then there's flashing lights and you can't see.

And I was supposed to be delivering a baby and suddenly I can't see out of nowhere. I've been perfectly healthy. And so nurse grabbed the nurse, grab the baby.

All good. But I'm like, what is going on with my own health? And so I started to have some other neurological symptoms. Really pretty scary. And so I, I was sent in for an MRI and which is what is great about being in medicine is you get shuffled to the front, right.

These are your friends, these are your colleagues. And so I got an MRI and the neurologist said you have the beginnings of multiple sclerosis. And I was 26, 27 years old.

I had two little small children. And basically I was, I would say this on podcast, I was given a death sentence. It was, we're really sorry. We don't know what's going on, but here's some pills and you should go home and be with your children and your husband.

And I was like, oh no, no, no, no. Like, I know that I just paid $500,000 for all these tools that are amazing. Allopathic medicine is amazing, you know, but I can't fix myself.

I'm like, no. So I went back and I got a naturopathy medical degree, a traditional one, and I started learning about detoxification and oral health and, you know, in the food choices and nutrition and genetics.

And I was hooked. I was like, this is amazing. And what I found was, is that there was a gap. And so there was a gap between all this amazing information, clinical trials that have been published.

And then there's getting it into your doctor's office. And on average, this is a published study. An average it takes 70 years for all that great information, the cutting edge therapies, all that to get into your doctor's office.

Doctor Haldermanu2019s Medical Journey

And I thought, oh my gosh, if I wasn't in the position that I would have been in, I would still be practicing medicine. But I step back and I don't see patients because I'm focused on the translational medicine.

I'm a board certified medical science liaison, meaning that I can take all those tough concepts and I can really make them, you know, really granular and make them understandable for people.

And that's what we're going to do today. And so I'm so excited to be here. You know, I've studied nutrition. I have a doctorate in clinical nutrition.

I have doctorates in other things as well. But really my passion again, is the neutral genomics. Like our our DNA, our blueprint. How do we optimize our, our health based on, you know, not just cookie cutter protocols, but again, based on precision.

And that's where we're going to talk about something so cool today. Yes, this is going to be so cool. And I'm always amazed with people like you who take their misery and really turn it into a mission.

And so through this, you have developed the 12 hallmarks of aging. So tell us about those hallmarks. So right. So the 12 hallmarks of aging. And I cannot take credit for creating these 12 hallmarks.

So these were published originally in 2013 by Doctor Carlos Ott and his team. And so this groundbreaking paper, The 12 Hallmarks of Aging, actually was only nine.

So 2013, we had nine hallmarks of aging. And then we had in 2022, he published another paper adding three. So now we have a total of 12 hallmarks of aging.

So what does that mean? It basically means that the reasons why that we're aging can be categorized into 12 biological processes that happen in the body.

So we don't really have to guess anymore. I felt like when I read these papers, I was given like the keys to the biohacking universe. I'm like, oh my gosh, you know, we're trying to do so many things to stay healthy, to really increase our health span, not just our lifespan, but our health span.

And so when I read these papers, I thought, and so many others, because these papers were groundbreaking, like, great, we have we have a way to look at aging, a new lens, to look at it instead of going, oh, I got another gray hair.

I've got some wrinkling going on. It's much more complex. But I'm here today so we can go through these hallmarks, these changes. It's almost like the dirty dozen of why we why we age and so when you understand these and again, I'll take the research and I'll send it through my filter so that it can make sense for the listener, if you're a layperson, so that you can have a personalized way of targeting your lung, your longevity plan, and that you know what is happening inside of your body to cause aging.

Because when we know better, we can do better. Yes yes yes yes. So I can't wait to hear what is number one. Okay. So basically the hallmarks are split up into three categories.

And the first one is called genomic instability. So our genomic means our genome. So our DNA is like the instruction manual for our body. And over time that manual can get damaged like pages getting ripped or smudged.

So the cell which which has the DNA inside of it, it can't follow the instructions properly. And so everything that that we are doing our DNA is, is the instruction manual again on what we're, our body's expressing, whether it's proteins, hormones, antioxidants.

And so think of that when that blueprint, when that instruction manual gets damaged. And according to the American Federation of Aging Research, our DNA is damaged 1 million times per day, per day.

So that is causing aging is that we're not able to have that that transcription where our DNA is doing what it's supposed to do. So you have some instability in there.

You have a real gift for making difficult concepts simple. Thank you. Thank you for that. So so genetics scare a lot of people. They they sort of think it's destiny and it's not destiny.

So tell us about these genetic snips. Single nucleotide guide polymorphisms. So a snips and why we don't have to worry about those. But we do need to know exactly.

So so your your DNA so it has coding on it. So it's just like a string of instructions. Right. And so when you have a gene you get a copy from your mom and a copy from your dad okay.

And so a really hot gene everyone is talking about nowadays is MT4 okay. So that is one that has to do with methylation. So when you have a copy you can get a copy that is fully functional.

So it does what it's supposed to do it when it, when it when it expresses it's actually making the correct protein making the correct enzyme. And so you can get two of those which means that your that's normal.

That's called the wild type. So you can have one copy though that maybe came from mom or dad. We never know really that has some a little variation to it.

So what's that. Single nucleotide polymorphism basically means it's just different than a normal than a normal gene. And so then when your when your body is told to to make a protein using those instructions, your instructions may be a little bit different.

And so when you express that protein it might not be as good at doing its job right. And that can mean like methylation problems. That can mean hormonal problems, that can mean longevity issues.

And we're going to get into some of these really cool topics like autophagy. Autophagy is the cleaning mechanism of your body. I got a bad copy for mom and a bad copy from dad on how I cellulite clean my body.

Right. And so that puts us at risk for, Alzheimer's disease, all kinds of neurological diseases, cardiovascular disease, chronic Lyme. So a lot of, you know, that that way that my body produce says those those proteins and those enzymes is different and it's not as good.

It's really not as good at producing. And so it's like I kind of I say this, I wrote a book, it's called A thyroid debacle. And in it we have a chapter on genetics.

And I talk about it being like a Lego set. So you get a copy, you get the same parts and pieces for your Lego set. But I get a really bad instructions and my instructions, and maybe it's really missing a few pieces.

And so I'm trying to build a little car, right. And my car comes out and it's missing a wheel. I mean, I still do kind of

what it needs to do, but it's not as efficient as that.

Other those instructions that were perfect. And so you have your your fully functioning protein or enzyme, and then you have your one that's kind of clunky.

So that's where you really don't have to. Let's kind of go back to what you're saying. Is that just because I have to it's called homozygous. So I have two bad copies, different copies.

That doesn't mean that it's doing them right, because we have this thing called epigenetics.

The 12 Hallmarks of Aging

And so we want to really optimize the way that we're influencing our genes and express we can influence our genes. Express to make up for some of these snips, some of these, these faulty, you know, the, the lack of that, that function, you can make up for it by really locking in on epigenetics above the genetics.

And so that's what they always say. They say that genetics loads the gun but epigenetics pulls the trigger. Right. So if you're eating at McDonald's every day no offense I'm sure there's something good you can eat McDonald's these days.

But if you're under so much stress, you know, if you don't like your job, if you're, you know, your your balls aren't moving, if you're dental health, if you're bleeding gums.

Right. So you the then you'll have the the expression of of your genome in the worst way. So it's kind of like this first hallmark of aging is about your genes in your genome that live on that DNA.

Right. But it's not all doom and gloom again, because even though you may have some, again, polymorphisms, you can really support your body, especially with nutrition.

And again, stress and all those things that really contribute. You can really do your best and not have to worry that your body is compromised. So, you know, just kind of looking at that and looking at the the genetic instability means even if you have perfect genes, let's say that you don't have any single nucleotide polymorphisms.

We live in a world where we are inundated with toxins. We're inundated where our our genes, even if they're they have the polymorphisms or not, they're just being attacked.

Attacked. So it makes sense, right? It makes sense that we can look at this as a hallmark of aging and know that, yes, the things in our in our life, unfortunately, like the toxins, they are causing some instability in that genome.

Yes. And everybody has things. Nobody has perfect genetics, you know, and we just we just deal with it. It's it's like whatever, you know, there we don't stress over it.

We don't let that create more stress on the epigenome. We we just accept it and follow amazing people like you who tell us what to do. So we're going to get to that, folks.

So the first three have to do with genetics. What do the next what's the next section. Yeah. So that so the first three. So the they're divided into like three different categories.

And the first has to do with fundamental drivers of cellular and molecular damage. So the second one right under that genomic instability is telomere attrition.

So your telomeres are like the plastic tips on shoelaces. And they protect your DNA. But every time your cells divide because they just normally divide, those tips get like shorter and shorter and shorter.

And when they get too short, the cells stop, they stop working or they can die. So it's really like you can do

telomere testing to see how long your telomeres are.

And that can give you an idea of like your longevity or how fast your cells are getting insulted. Because when my cell is sitting there and it gets like attacked by by a toxin, it'll replicate again.

And so then your telomeres are getting shorter and shorter. And so that's another one that's just it's just drive aging. And I'll just go into that the third one in this category.

So it's epigenetic alterations. So you kind of have your your genomic instability. So your your DNA is getting attacked. Your telomeres are getting shorter too.

And that's not good. And then so these epigenetic alterations. So imagine your DNA is bookmarked with the sticky notes telling your body which genes to turn on and turn off.

While aging messes with those bookmarks. And it causes the wrong genes to be activated or the right ones to be ignored. And that's things like deletions, mutations, translocations.

It's a little bit complex, but just think about like how it's just it's it's the system that's in place. Aging knocks that out of place. And that can cause issues.

Again, a driver of why you're aging. So things that we're going to hear about in the next nine hallmarks of aging are going to impact. They are epigenetic factors, correct.

Yeah. Yeah a lot of the a lot of the rest of them are epigenetic factors. And some like we can really we've hear it all the time is like mitochondrial dysfunction and chronic inflammation, which is like yes, everybody knows that.

And it's not a stretch to think like, yes, that is absolutely one of the reasons that you are aging. But under kind of like that. Next, the category of, of, of the first is the loss of Proteus stasis, which sounds kind of kind of like what?

I mean, that's a that's a lot, but Proteus is. So basically proteins are the tools your cells use to function. But with age they get rusty, they get broken down, they get misfolded, and it just clogs up your system.

And this one loss of Proteus cases is really related to, again, those neurodegenerative disease diseases. And so it's something that's happening in your body.

There's like this critical tipping point where our health and our aging aging occurs when replenishing the good proteins no longer keeps up with the deletion or like getting rid of the damaged ones.

So you can kind of think of that with Alzheimer's, of the beta amyloid and some of the other like the tau protein and, and then the alpha synuclein with Parkinson's, those are just your body not being able to get in there and do that cleanup, do that.

That loss of Proteus tastes like your proteins are like they're out of balance and it can cause big issues. Boy. And you really see how people can feel hopeless in that.

And and then, of course, I love to bring it back. Kelly. To relationships. I mean, all of these things that you have in your pillars impact relationships.

When people don't feel good, they're not as involved in when they're not as involved. That's even epigenetic. So, so so continue tell us tell us about that would be number four.

Tell us about number five. Yeah. Number five. So before I start number five I want to tell everybody that when I found out about these hallmarks of aging, I was like, this is great.

I'm so happy to know about these. But how did they relate to me? Which of these are really being affected

negatively because of maybe my genetics, my epigenetics?

So I really wanted to know about about what genes are related to these. And that's where we're going to wrap this up at the end, because I'm going to tell you about how you can personalize.

You can personalize looking at these 12 hallmarks, and you can know which ones you're going to have weaknesses in. Because I always think it's nice to know, like where's our genetic weaknesses?

Just it's good to know. So if you're looking at it and going like, I don't know where to start, I don't know which one. We have taken the time for your research labs and myself and a geneticist.

We looked at this and we found the genes. So then I'm looking at my my personalized longevity plan because I know which ones I have problems with. So it's like if you are problems with genomic instability, you have to be extra sure you are protecting your DNA.

You're going to get those antioxidants in and what kind of get into some examples. But this is like this is like the keys again to the biohacking universe.

It's like, oh my gosh, now I know why we age now I know what is causing me specifically to age. And then here's the exact things that I need to do. So we're going to we're going to get there.

But we're right. Let's keep let's keep getting through the homework. So number five is deregulated nutrient sensing. So basically your body has sensors that tell it how much energy you've got and how do you use it.

Aging throws those sensors off. So it's like a broken gas gauge telling you when you're full when you're running on empty. So pretty straightforward with that one.

As you age that just happens. And the sixth is mitochondrial dysfunction. So mitochondria are cells power plants. They give us our ATP our energy currency.

And when they wear out they just make less energy. And that again that can just cause so many downstream effects. But it kind of would make sense that as we age, that system is just it's going to get a little bit, a little bit broken down unfortunately.

But again, if this is one of your weaknesses, then you want to make sure you are supporting your mitochondria. And I'm going to give you some tips and tricks on how to do that.

If cellular senescence. So this last one in this category cellular senescence. So some cells stop dividing and in most it hit this limit. So I will say this is that cells do hit the limit of how much they can replicate.

So they're going to go along and they're going to replicate. And they're going to replicate. Right. And then they hit this Hayflick limit where they can't replicate anymore.

So they're not dead, but they're they're not metabolically active. And so we call them zombie cells. So think of your body as you're getting older, you're accumulating these senescent cells.

So there's the zombie cells. But the problem with these zombie cells is that they spit out all these inflammatory messengers inflammations. And it just ages us.

And so I actually published a paper in the Journal of Aging last year on cellular senescence, because it is becoming it's a it's a huge billion dollar target for like pharmaceutical companies and nutraceutical companies.

But really, if you think about how we can stop that, it really starts with, again, epigenetics like low stress, low toxins, good relationships, like you said, because we're just putting so much stress on our cells and then they're turning senescent.

And then they just sit there and then they spew off all these again inflammations. And there are things that you can do, especially if you have genetic weaknesses here.

There are compounds that you can take their practices that you can do to really slow this up and get rid of them. That's called a lytic. Oh love it. You know, as as a clinician for 40 years, one of the saddest things I see is when somebody comes in and says, Doctor Debbie, I wish I'd known this.

If I had known what this was going to do, I would have changed my lifestyle. And so that's what's so inspiring about your work, is that you're helping people at any stage.

And. To to make little changes that are going to absolutely, greatly impact their trajectory. So I'm your percent, 100% because I think that's right. That's like the personalized approach that we're all looking for is that if we see that we have genetic weaknesses in our mitochondrial dysfunction at any point, starting to support them in the right way, and for that person can make a huge difference, like, absolutely.

So I think this is something where it's such a great tool at any stage. But again, you you really want to lock in to like what what is aging you the most.

Right. And so that's where I think the power lies in looking at them. And like you said, it's like, I wish I would have known where it's like now we have so much information, which is it's just so cool.

It really is. Because again, the genetic thing is like, oh, well, my, my, my father had this and my grandfather had this and I'm just stuck in that lane.

No, you can take a detour and totally change where you end up. So okay, so we're on we had cellular senescence and I want to I want to get back to that because I'm really interested in the inflammatory inflammasome, area.

But number eight. Number eight. So we have stem cell exhaustion. So your stem cells are your internal repair team. And as you age, this team gets tired or runs out of members.

So healing and regeneration, they just they just slow down. And that just happens as we age. But again there's things that we can do to help protect our stem cells, to help not wipe them out so that we can keep them along.

Because again, stem cell exhaustion has to do with all the diseases of aging, cardiovascular, neurodegeneration, metabolic issues. So really looking at that one to is is a great one to help drive your personal plan.

Love it, love it. I know for our listeners you love talking about stem cells. We had Doctor William Lee on and that's what we talked about is stem cells.

It was a fantastic interview with us a couple of months ago. So number nine. Number nine, so altered intercellular communication. So your cells are constantly talking to each other and they're coordinating responses with age.

The cellular group chat becomes confused or a little chaotic.

Genomic Instability and Telomeres

And so that leads to more inflammation and less coordination with that communication. What a great word. Picture this this chat going on. Oh that's so good okay.

So altered intercellular communication and communication is the key. That's the key drive. That's the key. So they. Just yeah they don't. They stop talking or they say you know jumbled words I guess.

So they can't get the job done anymore. Right? Yeah. Number ten is is one of my absolute favorites. So disable macro autophagy. So autophagy is basically your cells cleanup crew I always think of like think of like these little intercellular vacuums that are going around and they're just getting rid of debris.

They're getting rid of old proteins. They're getting rid of all kinds of just that, that things that just gum up your cells. But autophagy can slow down with age.

And so then like the trash is building up in your cells, which is leading to dysfunction and disease. And this is what I'm personally I know that I have those snips in autophagy.

And so again putting me at risk for chronic Lyme which I that's eventually what I got diagnosed with this chronic Lyme and mold issues. So it just makes sense that this is one where I needed to focus on a lot.

It's they're called like your non-negotiables, right? If you're looking at these and you know, you have genetic weaknesses here, here and here, it's like it's go time, right?

It is really time to really pay attention to these while optimizing. Like the whole picture. And that kind of leads me into number 11, which is chronic inflammation.

Right. Inflammation is this new word. And that's really not a surprise I think even to a layperson is like, well, why do we age? You know, some people may say like, well, the sun or like my stressful job or like my spouse.

And it's like, that's not wrong. Like, that's I mean, but, you know, scientifically chronic inflammation is inflammation. Even when there's no infection, when your body is just ramped up.

So we're always in this state of we should be in a state of balance called homeostasis. And a lot of the times, especially in the world we're living in with the food sources we have, and, you know, all the toxins that were just tipped in this favor of inflammation versus reduction.

So like inflammation anti you know anti inflammatory. And so when we're in this chronic inflammation it's like having a fire smolder smoldering constantly in the background.

And it shuts down. Everything shuts down. Your detox shuts down. You know your your liver. There's these transporters in it called the MeCP2. And that's how the liver gets the toxins out that it's so nicely packaged up for us.

But in a state of inflammation, like the chronic inflammation, those transporters get shut down. And so those toxins don't go into the bile where they should go into your gut and eventually into the toilet.

They end up going back into your bloodstream. So I mean, chronic inflammation, this is one of like the most important ones where we really have to look at it.

We have to see we can look at markers, we can look at signs and symptoms and really try and be aggressive about damp, meaning that this hallmark in particular.

Well, and that's a hallmark people have a lot of power over and it is just so big. I mean, you could you could, you know, throw a dart and pick an area to work on and make a difference.

So that's yeah, I really want to talk about that. So number 12. Yeah. Number 12 ties right in with number 11. So number 12 is microbiome disturbances.

Yes. Amen sister. Yes. Yep. So your gut is home to trillions of microbes that help regulate your immunity your digestion, your mood. And we have that great gut brain access through the vagus nerve.

So really like looking at that gut looking at the microbiome. These are one these are actually couple of the new ones that Doctor Teen added. And it's like yes, we've been saying like the gut the gut, the gut for so long.

So as we age, unfortunately this gut ecosystem can become imbalanced again leading to inflammation. And what's interesting about this one is that when you're looking at gut dysbiosis, when you're looking at gut issues, Sibo, all

kinds of different diagnosis, because our gut is just it's it's actually like an external tube, like every, you know, all what we're eating and everything going in.

It's so key. And so when it's off you're going to produce what's called LPs lipopolysaccharide. And that comes from like the bad bacteria. Right. So this LPs is like a metastatic disease.

It is the worst metastatic disease because LPs can shut down all your detoxification. It can spur on inflammation. And so really I feel like these are so tied in like you said this is empowering because we can really we can really support gut health.

We can do a lot to really work on our gut. Lower that LPs and then lower that inflammation. So I would think that this is a big part of your practice, doctor.

Debbie's looking at the gut and the gut microbiome. It really is because the health starts in the gut, but the gut starts in the mouth. And now with with this, with these incredible technologies, we can actually find oral microbiome, oral pathogens in the gut that we know started in the mouth.

And they are in tumors. They are impacting irritable bowel. Of course we find them in the brain. So I appreciate that you address this because we really have held the mouth out as separate.

But it is a big, big, big contributor to the gut microbiome. It's one long tube, you know, stem to stern, north to south. I say pi, Hilda, you know where and so it's just, you know, it really it really, really matters.

So okay, let's go back. Let's, let's there's just so much I want to know people want to hear about from you. So where do you want to head next? Yeah, I think let's head into first of all, that was brilliant of you to say that that last hallmark, it says microbiome disturbances.

But the paper focuses on the gut. But really looking at the mouth takes it a step further. And so I absolutely love that because balancing and making sure that we're not seeding the gut with the bacteria seems like an even, you know, more root cause from the root cause of, of the gut being the problem.

So I absolutely love that. But I think what we should do is we should talk about now the, the different panels that we've created, a premier research lab to look at where your genetic weaknesses are.

And so you may have a genetic report that includes some of these, these snips. And so you can go and look without even doing the report. But the report is something we created a basic the basic panel and then the advance.

And so the basic will include your biological aging and adaptation which includes that genomic instability the telomere attrition. It'll include mitochondrial dysfunction chronic inflammation and microbial ecosystem support.

Proteostasis, Nutrient Sensing, and Mitochondria

So if you kind of think like those are your foundational basics, like are any of these causing me to age? Of course, these 12 hallmarks of are causing anyone and everyone to age.

But do I have even more genetic weakness in one of these particular areas? So I can just go into one of the first genes that we isolated is called the ADG are D1.

So that supports tissue signaling, immune responses, structural and integrity, which is like critical for maintaining all tissues and again tackling aging.

And so if you have some polymorphous isms in this first of all, I suggest that we're not treating genes here. It drives me crazy. I was like, I have too far.

Let's take mental thought like Bentham for like, no, no, no no no no. Let's look at someone's signs and symptoms. Do you have premature skin aging? Do you have metabolic disease.

Do you already have prediabetes. Do you have cardiovascular issues. Are your lipids okay. So it's like looking at the signs and symptoms can really tell you are you expressing that gene.

Just like we started to talk about again it's about the epigenetics. So that's what I like to do. I like to see this and say like your we have your report, doctor Debbie, and you have some genetic weaknesses here.

I would even suggest doing a biological age testing because this one falls under the category biological aging. You can do that with some companies, like True Diagnostics, where I may be a certain age, but yet that's chronological on the birthday cake, right?

But I can actually be biologically younger or older. Right? So if I did this test on you and I found you to be a couple of years older, then we would go, okay, it's time to really lock down on getting this biological aging, this category.

Let's see what we can do to get you back on track and have your biological age actually be slowed so you can actually be be even younger than your chronological age.

And so for this one it's recommended in the literature. So all the recommendations are not out of thin air. They are based on published papers as clinical not preclinical.

So this is not talking about well this did really great on a rat or this too really. It's like no these were actually shown in people. So EGCg so green tea vitamin C and glutathione or NAC.

Those are the some the ones we really want to make sure like your non-negotiables that you're using those appropriately to really protect that DNA, protect that genetic instability and protect your your telomeres as well.

Okay. So I want to repeat green tea vitamin C in I c. And you had one more. Glutathione on. And a thigh on. Yeah yeah yeah. Yeah for sure. Master antioxidant.

And you're just said just yeah it's it's the best. And I think like you just have to be careful. So NAC some people don't convert that well to a file because they have some genetic snips.

So that's why I like to use again the genomics to guide. Because if you're taking a bunch of NAC but you can't convert it to glutathione, well then you need to iron.

And then you just want to make sure that the glutathione don't. It has to be recycled in the body. So you don't want to take a ton of glutathione. And then what happens is, is that it'll turn into more of a burden on your body.

So there's a balance. And that's why I love working with like encouraging people to work like with people like you, because we can really look at that and target that and get the right dose for you.

And then again, we're looking at signs and symptoms. We're looking at labs to make sure that this this category is well supported. Yeah. Yes I think that's key to point out with even supplements, I tell people they're they can be like your high school boyfriend or girlfriend.

Too much of a good thing is not a good thing. And so, you know, it's really it's really do I know think about that. But it's really true, you know, because we just think we can chug whatever and, and okay, I'm going to cover a multitude of other lifestyle practices, but it's not that way.

It needs to be at, optimal levels. So, so that those are actionable things because people can easily get SGC green tea. We've had a lot of a great podcast about vitamin C with Doctor Levy.

And I see it at diet lots. So great information. Okay. Yeah. And then another one. So under that category so

mitochondrial dysfunction. So we'd be looking at the TFA gene.

So that's essential for mitochondrial DNA transcription. Replication plays a critical role in really maintaining your your mitochondrial DNA and stability and function.

So think about if you have polymorphisms in there. It's like well we better take a look at how your mitochondria are functioning right. So we're going to look at things like the metal swab.

We're going to look at Ki key labs. And again signs and symptoms. Are you fatigue like because again mitochondria power every one of our cells. So we really want to make sure that those are on point.

And so if we find that more support is needed again non-negotiables like I'm going to be on CoQ10, I'm going to be on PCU. We look at creatine. Creatine is great.

We look at using like at NAD, which is a form of NAD and things like magnesium. You absolutely need magnesium for your mitochondria to work. And so if you have some snips there, we really want to make sure that you're looking you're really looking to make sure, like you said, you don't want someone coming to you going, I wish I would have known.

Well, this gives you the information that you wish you would have known, like right now and then with the T fam. The fam. Also, it's really important to support your mitochondria in the literature with fasting.

Some intermittent fasting if you're approved to do this by your license. Health care provider A ketogenic diet can definitely help with our mitochondria.

Again, that's person specific. Some people can't do that. Some people fail on it and then cold exposure, high intensity interval training and resistance training because those all upregulate P's GC one alpha, which causes your mitochondria to perforate.

It's it's a mitochondrial biogenesis driver. So it's like we can get really specific on what you need to do to support it with nutrition. And then the other things, those epigenetic lifestyle things that you can do to really keep those mitochondria on point.

Well, it makes sense to Doctor Halderman from even a the standpoint of spending money wisely, because I see I see too many people who just oh, by this, oh, I buy this.

Oh, I gotta have this in their cabinets just full of all these pills and who knows? Number one, if they're good pills and, you know, supplements even.

And then number two, if your body even recognizes those and and if they're absorbing. So to me, this targeted method testing not guessing and knowing what your body needs based on your genetics, based on your lifestyle.

Cellular Senescence and Stem Cell Exhaustion

I mean, the testing is going to show people so much more in terms of, you know what, how they can can make small changes. So. Right. Yeah. And then the last one I'll mention in this category is under chronic inflammation.

So again we're all at risk for chronic inflammation. We just we really are. But those with the il6 are. So that's a receptor. So encodes for the interleukin six receptor which is central to immune signaling and inflammatory responses.

So you'd really want to look at how inflamed this person is. Again you can look at all the layers that have to do with inflammation. You can look at signs and symptoms.

You can look at their diagnosis and know you know, do they have this inflammation. And then if they have these

snips, if you have these tips, it's like your non-negotiables are things like tumeric and resveratrol.

I mean like really, really honing in and helping your body to really cut that inflammation down would be one of the great strategies. And again, another snip underneath that chronic inflammation category is a GK Rs.

So that is really critical for glucose metabolism. And I just shout from the rooftops how important glucose metabolism glucose regulation is. I really encourage people to wear a CGM.

I usually have one honest to take a break, but a continuous glucose monitor because for for the foundations of health, again it's like blood sugar blood sugar blitz or like one I think 50% of the population, one and two people have prediabetes in this country.

It's like, whoa. And so then if you on top of that, if you have a polymorphism, a snippet in this, it's like you have to be extremely proactive in that blood sugar management.

Like, I don't care if you if you have any, any part of the spectrum of diabetes to prediabetes, it's just really important that your test your blood glucose, you're having professional help you to really target in.

And then there's tons of really great nutritional things that you can use to help with blood sugar. Berberine. Yummy. You can use the probiotics and all kinds of other things to really help, you know, chromium to help with that blood sugar regulation.

But if this is you and this is me, unfortunately, like I'm locking in on this because it's driving my aging, it is literally driving my aging more so than the mitochondrial dysfunction.

Again, like autophagy and chronic inflammation are really big ones for me. So I'm really locked in on these. Well, and interestingly, there's incredible research in the two way street.

But between oral pathogens and blood sugar. So so it increased blood sugar increases periodontal disease. Even early periodontal disease matters any bit matters.

But then paired the pair O'Donnell disease pathogens also increase blood sugar. So so we routinely see that when people learn to do some simple things, to take care of their mouth and address this early bleeding, that we get much better blood sugar control.

That is so cool. That's a clinical pro for me. Thank you Doctor Debbie, I didn't I didn't I mean obviously the connection is like of course right. I mean of of course.

But playing into again, one of the biggest drivers of all of our top killers cardiovascular disease, cancer, metabolic issues, neurodegenerative diseases is again blood sugar.

And then when you take that one step further, it's really getting at that root cause, which that's what we're all trying to do. We're we're just all trying to optimize our bodies and not drive ourselves crazy doing it.

And like, that's what I, I love what you said about people come in and they're on all these things and they're spending all these, this money and that we can really pare it down and we can get to really the fundamentals and a tool like these, these panels where you're looking at your weaknesses in the hallmarks.

I think that's a a great way to not have people pulling their hair out and just just burning through money on ideas or suitcases of supplements that they don't necessarily need.

Yeah. Well, and then they get they get discouraged because it's like, well, I'm taking all this stuff. Someone brought me a sack of 63 things and they still feel terrible.

So they need this testing. Yeah, yeah, 100%, 100%. And then so like rolling into the advanced panel. So then we're

looking at epigenetic clocks age acceleration.

And so under that umbrella is like your cellular senescence. Like how how apt are you to have an increased burden of these little zombie cells that are spewing out all this and for inflammation.

And so that will look at under there and then give you some nutritional information that you can do to help. You can also look at the stem cell exhaustion and look at how to support those.

One of the really cool ones that we found, we're doing the genetic work, which was a lot of work to go on these homeworks and find all the genetics that that really match up with them.

Was this gene called a t r t e r t. So TRT and it actually has to do with your telomeres again. So if you have this you may have a predisposition to shorter telomeres, which is it's not good.

You don't want your telomeres short. But really this one was the the biggest stress gene. So there is a gene that is screaming to you. You need to manage your stress like you really do.

It is this one. And it's so interesting because it's like, you know, we we think like, you know, being stressed out and have it, you know, I'd like to do a B testing where we strap in and or you're just I like the biometrics but really looking like, oh my gosh, I really need to, to to hone in on what is stressing me out.

And this one again, it's like, look at your stress hormone levels, look at your cortisol. Look at your V. And don't don't push that aside. Don't really you cannot oh supplement your your self out of stress.

Like yes.

Inflammation, Microbiome, and Testing Panels

You just I mean there's some great adaptogens and Purell has some amazing, amazing adaptogens that they really help, but really kind of looking at the empowerment of this is that, you know, your stressful job or your stressful, you know, relationship that is causing you to age very quickly, especially with this TRT gene.

So it's like when I see this one, I'm like, okay, you can use like things like astragalus and of course vitamin D, omega threes, curcumin. And again green tea.

But really again you can balance those with really locking into managing those stress levels. Thank you thank you, thank you I think this is so key when we talk about relationships because, you know, life is all about relationships.

But in some cases, Doctor Heldman people need to distance themselves from you know, toxic people. And I think this is so key because we think, oh, get along, get along, get along.

But there's times when it's actually deadly. Yes, it is deadly. It is literally causing you to age. And that's not what we we don't want that to go any faster.

Right. And so yes, like looking at the relationships again and saying no, like that's a really good thing to do, especially as a woman like you. It's okay to say no.

Like to all the projects and all the things, you don't have to be everything to everyone at every minute. So especially if I see this in a woman who's just been burning that candle at both ends, right?

It's like, whoa, whoa whoa whoa whoa. This is not looking good for you, right? We we really, really need to be mindful and just taking it seriously. Because I think some people think it's a badge of honor to take on so many things and be so busy, but it's like, take a step back and really look at how this is biologically affecting. You know, that is powerful, super powerful for sure.

So this test, what does it look like? Blood test. Saliva test. It's just a saliva test. Yeah. It's just a saliva test. And again there's two different panels.

There's basic and there's advanced. And really I think that the key again is that I wanted to drive home the message of why we h because I think that it's a black box sometimes and we're not sure we're not sure like what is pushing us out of that health.

Yeah. Into our bodies not working properly. And that's where looking at the 12 hallmarks and going, okay, I, I've heard about my gut being important. But now Doctor Kelly was like, listen, this is published research that if we're not really honing in on our gut health, our oral health, gut health, it is aging us and and looking at chronic inflammation.

What can we do to really to really reverse that, to take care of it? You know, some of the other ones, like the loss of proteome, that seems a little bit esoteric, right?

But it does come down to, again, the foundational. It comes down to good oral health, good diet, sleep, stress and all that is going to really help even if you don't do the genetic tests.

Just looking and knowing about the the ways in which that your body is aging. I think that is so important, especially since like we started off talking about our our genes right in the number one thing is genomic instability.

Like our genes are getting our DNA is getting attacked a million times a day. Right. And so just look like, what can I do to have healthier air, healthier water and healthier ecosystem?

All every microbiome that I have, my skin, you know, my mouth, my gut and looking at what you can do to minimize that. So knowledge is power without having to go in and look at genetics.

But I think it's so cool that we can finally stop guessing and going, well, I think I'm inflamed or I think, well, do I have problems with the top, the G do I, you know, do I clean up my cellular, you know, garbage?

Well, like I, I don't know right. So it's like, oh we'll show you, we'll show you exactly where you're at. And then getting it give you the practical, targeted steps in order to optimize your self, optimize your body, and not follow some biohacker who you know was telling you to do X, Y, and Z. It's like, well, that may be great for them, but it may not be good for you at all.

I totally agree, you know, I don't like one size fits all clothing and I don't think you do either. So why would we have one size fits all health practices?

You know, and that's what someone's just always selling something that's, you know, everybody should take. And I just love your research. I love your your commitment to accuracy, to information that's actionable.

Doctor Hellman, thank you. So know I, I want to do this. I want to do this test because I think I always tell my patients, you don't know the snake that doesn't bite you, because, you know, we're big gardeners.

And so a couple of summers ago, my husband got bitten by a copperhead and in our garden. So it makes you look at things differently and think, okay, what what can what can we do to keep the snakes away?

Okay. Do we have do we have any piles of wood where mice like to live and snakes like to eat mice? You know, it's sort of that same same philosophy of, you know, what can you do that's very root cause to change your susceptibility to multiple sclerosis or to, in my own life, a diagnosis of chronic lymphocytic leukemia, whatever, whatever it is.

And and once we know what we're vulnerable to, then we can address those vulnerabilities. Right? We can take take the guesswork out of it, just like you said, it's I think people can drive themselves crazy being like, well, I heard I'm supposed to take this Medina, I was heard, I'm supposed to do this.

And it's like, it's it's like, give up. It's like, okay, you know, like there's just too many things. And it is, it's frustrating. But again, this really narrows it down.

It helps the person get a precision or precision report based on, again, their weaknesses. And it gives again the labs. That would be great to know if those genes are expressing like how bad is it?

Because again, like you said, what are the the the rates of Alzheimer's and neurodegenerative diseases are awful and they are going up. And so I feel like if you really read this paper, if you look at these papers together and you look at especially the loss of proteases and some of those, it's like, I think we have the answers here.

I think we really know in your work of like Dale Bredesen was with Alzheimer's. It's very comprehensive and amazing. But really just looking at I don't want to I don't want the end of my life to be in chronic pain or of a terrible neurodegenerative disease, or, you know, I want to know today what I can do.

And that's really what the panel offers. Yes. And when you know what you can do, then you don't spend time worrying about the things you can't do. You know, I mean, there's, there's a in our environment, Doctor Hellman, that we can't control. I mean, we've got to have 5G.

We've got to have, you know, whatever it is. And so if we can control certain things, then we don't stress over what we can't control. I want to go back to your story.

So you got this diagnosis that changed your trajectory. What happened? Tell us more about that story. Yeah. So so I, I stepped away from practice medicine and so I earned that naturopathy medical degree.

The traditional one, to really help myself. And my love has always been education. My love has always been really translating that really tough medical science for practitioners.

I've lectured all over the world for laypeople. And so it just took me down the road of, again, research. So I published papers on senescence, and I've served as a chief medical officer for a biotech company.

So really just looking at things that we can do and to optimize our health. And that's I just I just really took all the information that I was learning and I applied it to myself.

I applied it as best I could. And when I found genetics, man, it was 15 years ago, I was like, wow, this is great because I had two children that were born and one of my my son had a sacral dimple, and so that could have been spinal bifida.

And so and then my daughter was born with cleft. I'm sorry. She was born with tongue tie and lip type. So I was like, something's not right here. So I looked at my genetics and lo and behold, I had problems with my each of our problems with the methylation.

And so when I use the genetics to optimize myself, I had another baby a long time after the first two. And he's just perfect because I took that information that I knew about myself genetically.

And I wasn't scared. It empowered me.

Personalized Supplements and Lifestyle Strategies

It empowered me to make changes and look at my methylation panel and make sure it was on point because I was scared that if I had another child that would have, you know, would have spinal bifida or something.

So again, that kind of to be on the healing road and I'm 1,000% recovered. I don't have it. I just had an MRI last year. I don't have any backing at all in my brain and functioning at a super high level.

And so that's where it's like people with my story. It's it's really sometimes it's inspiring to them because if I would

have just gave up and said, that's it, like, I probably wouldn't be here, I, I really wouldn't be here.

And so that's kind of how I got to. And I'm a clinical advisor for Premier Research Labs. And there I'm coming in and really helping to build these genetic panels.

Because I've built tons of genetic panels, I've used them appropriately. I've seen all the things that can go wrong, you know, with using genetics. So I feel like we really have a very strong panel that is going to make a big difference in people's lives.

Well, and a big difference in their relationship. Chip she think about if you had just given up here, you have these children that love you and then you love and you're your husband.

And also I think people too often wear this badge of a diagnosis. And and I make people stand in front of the mirror at the, in my clinic and say, you know, I am not my diagnosis.

I am a child of the living God. My body is designed to heal. I have to figure out what I need to do to to enable that healing, empower that healing. So to me, this test is key.

Absolutely key. And I believe, Doctor Halderman, that in the long run, I don't even know what the test cost. But I'm going to look it up today. In the long run, it's going to save people money.

I totally believe that 1,000%, it is really going to save the it just it will the guessing game will be will be retired and we will be able to be very strategic and have our non-negotiables.

Like, I know that my mitochondria are susceptible, even though every single day that I'm on this planet, I'm happy to be here, but my mitochondria wearing out, so I have to be extra aggressive in that.

And then the other things, we don't have to just keep grabbing things and buying things and I do I really do think it's going to save people money, which is. Great. Yes. And give them more room in their cabinet.

You know, all these pills. I said, I don't want to be one of those old people with all these pills laying out, you know, not one of these strategic. Well, you have just been delightful and inspiring, and I, I'm so excited to take this test.

And so, listeners, I'll be I'll be taking this test and doing some Instagrams and all and telling you what I, what I find because my, my club members are now below, clinical find.

So I think that's all gone. And that's a detox issue. You know, that's, that's also a detox issue. And so I want to I want to keep it that way. And I wonder if you have some autophagy snips.

I bet. Wow, I can't wait. You know, I'll let you know how it turns out cause I'm going to order this today. So anything else that our listeners need to know, you're just you're if you could if you're watching this on YouTube, then you'll know how beautiful Doctor Halderman is.

If you're on, if you're on the podcast audio only, then you gotta look her up because oh my is radiant. Now you are writing, you guys and I have. To ask you, do.

You have to be? I don't know how old you are. I mean, but. I'm 62 now. Like. Like you. You look like you're like, you know, 18. Oh my gosh, you're so right.

I really. Do. You really do. You do too. You are literally radiant. I will say this is that before I, when I was in medical school and training, like I, I was 20 pounds heavier, my skin was dull, I, I, I literally walk the walk.

And so I do the things that I tell people to do, you know, with optimizing genetics and, and I've really been working on my hallmarks for a long time.

And so I think that this is just what happens, like my biological age is seven years younger than my chronological age. Wow. Way to. Go. So yeah, I yeah, it's it's it's here for the taking.

It is it is the low hanging fruit that we can all have. We can you know again knowledge is power. If you take a biological test, aging test and you are older than your chronological age, it's like it's time for action.

It's just it's great news because now we know, now we know. And what we can do to to help that. But again you you're just radiant. I, I adore all the work that you're doing.

You're just a powerful voice and advocate and absolutely love your content. It was such an honor to be on your podcast. Doctor W, thank you so much. It's a joy to have you and all have all this information about the testing in the show notes, folks, because I'll be the first one before this even launches to order my test.

And I might even be able to put in the show notes what I find out because we're, you know, that is exciting.

Doctor Haldermanu2019s Recovery and Closing Thoughts

So thank you all for joining us today with Doctor Kelly Halderman. How can people find you and your info? Yeah. So I, I'm on Instagram, just my name. I'm on your most social medias.

I do a lot for premiere Research Labs. So if you follow on Instagram R labs I'm on there a lot. And they have OG, they have TikTok, all of the different social media.

But that is where I'm devoting most of my time right now, because I'm so passionate about bringing this test into the hands of practitioners and people so they can optimize their health.

Is this a test that people can get directly, or do they need to go through a practitioner? At this point, we're looking at going through practitioner.

Just because of the the nuance of how you're looking at the science and symptoms and then the labs, we just don't want to have someone take the genes, get all, get scared and then, you know, not know exactly what to do.

So it is practitioner. So ask your practitioner. You know, have them go to PR labs.com and order the test kits. It's very simple. Just saliva no no needles.

And you're you're going to be set and you're going to get some great information okay. So I can sign up as a practitioner today. You sure okay okay I lots of patients interested in this.

Well thank you. And again listeners, thank you for joining us for Vitality Made Simple. We want to enjoy every single day. I say I want to live to be 100 and have, you know, 100 good years and two bad days.

And I think with with this test, we can do that. We can that can help facilitate that. And we're now I don't even know 140 countries and 50, 500 cities.

And that's because you all are sharing. You know, I used to be a total social media loser. I'm not as bad. Now, I do have an Instagram. So you all join me on Instagram.

We're having fun there and share this podcast with whoever wants to age more slowly, enjoy their life, enjoy their relationships, maybe not get bitten by that snake that's, you know, some kind of chronic illness that's going to steal their money, steal their time and steal their joy.

Thanks again for joining us. Blessings. Until next time. Thank you for tuning in to Doctor Talks. We hope today's episode has enlightened and inspired you on your path to optimal health.

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