Introduction and Guest Background

– Hi, welcome to another episode of the Reverse Inflammaging Summit. And I'm your host, Dr. Robert Lufkin. Today we get to speak about some of the foundations of longevity and we get to speak with a true expert in the area. Dr. Kelly Halderman is a medical doctor and an expert in longevity in the application of antioxidants to reduce inflammation, which is a great fit for this program. So, Kelly, I'm so happy to have you on the program. – Thank you, Rob. It's such a pleasure to be here with you – Before we dive into the area. Perhaps you could tell us a little bit about your background and how you came to be interested in this fascinating area.

– Sure, absolutely. So long, long ago, I was practicing medicine and I myself became ill and it was a real shocker because we pay a lot of money and we go to school for a very long time to have all the answers.

And what I was experiencing was just very odd. I was delivering a baby on call and I had a Giantsco toma from a migraine. I had never had migraines before in the past and suddenly I had, you know, visual field and I had foot drop and all these very strange symptoms and I was eventually diagnosed with multiple sclerosis.

I was given basically two medications and told to go home and be with my young Children. Well, this didn't exactly work for me because, you know, that paradigm in the al empathic paradigm, we do so many wonderful, wonderful things. But at this point, I felt that if this was all that was going to be offered to me that it wasn't enough.

So I went back and I earned a traditional naturopathic medical degree. I went and studied clinical nutrition. I got a doctorate in, in um include local nutrition as well. And I was able to apply these naturopathic philosophies such as detoxification and nutrition and hydration and to understand how my body was working. And I was actually diagnosed with lyme and mold infections, thankfully got to the root cause of, of the issues.

Personal Illness and Path to Longevity Medicine

And with that, I just really knew that I needed to leave the al empathic medicine behind because, you know, in this world, I think that we, we really are, we have really great access to knowledge, but we need people who are educated, we need people who are able to go into pub med who are able to understand this complex literature and pull out, pull out areas, pull out concepts, pull out things that are um do no harm that are, you know, basically without harm. And again, we're going to talk about a lot of the hallmarks of aging and what we can do other than pharmacological therapy.

But I think that that's really where my gifting is, is that in the education and research. And I'm currently a chief medical officer for a biotech company. And again, I get to use my voice, my educ I no longer practice medicine anymore because my time is consumed with.

I mean, I bet you you as well know Rob that this is, this is a rich and robust um field to be in and it's very exciting. So I'm excited to be here today with you to really bring to the forefront.

What is aging, what is implementing, how is it affecting us and what we can do about it? – Yeah. Thank you, Kelly for sharing that, that story. It's so powerful and we're hearing again and again, so many people in in as health practitioners come to this space through their personal experience and their personal journeys that are unfortunately um you know, fairly common.

So for years, the multiple sclerosis was a misdiagnosis essentially and it was mold and Lyme disease that was creating those symptoms. Is that, is that right? – I actually had some some changes on M R I.

So I do think those changes were induced by my, my terrible diet. My stress you know, like being in practice was something that wasn't resonating with me. So, you know, mind, body spirit.

And then of course, the Lyme Disease I was, I was living in northern Minnesota. I was in an endemic area. And so, um, I do believe that it was an accurate diagnosis.

Um, but I have zero symptoms since getting to the root cause I worked really hard to maintain my health. But I, you know, I feel like I'm 25. So, you know, it's a great pathway to be on when you can continually know exactly what to do to optimize your health.

– Yeah, I love your success in that. What I wonder before we leave your, your story, what, what work actually for your healing? What was so successful for you? – That's so interesting.

People ask me that all the time like Dr. Halderman, what did you do to, you know, to, to really reverse because I was bedridden, Rob. I could not get out of bed. I couldn't understand when people were trying to tell me what their phone number was. I was like, what's a seven? I mean, my brain was so inflamed and from going from that state to where I'm at right now, it took a multitude of things, it took time. It really did and I think it took hope, it took hope that there were things that I could do to my healing.

But yet my body is a healing machine. We are innately designed to heal. If you cut your finger, there is not a lot you can do to stop that process. And that's what I kept thinking when I was really ill is that my body is designed to heal if I give it what it needs. And so I just started at foundation Rob, I started with gut health and optimized that went on to helping my body detox properly. Um And we're going to get into this because this is one of my passions along the way, was optimizing hydration.

I mean, it sounds simple and you know, we really kind of okay. Yeah, we're supposed to drink our eight glasses of water a day, but Hydration of itself is so fascinating, endlessly fascinating and it's also so critical and especially when, you know, so many biological processes in your body, which is 60% water depend on it. And so I was always thinking about water along the way, I always think about hydration. And that got me into researching molecular hydrogen and things that can be done to plain water um such as electrolysis that can actually change the water can actually restructure it. Um There's a lot of work by Gerald Pollack who is now a friend and you know, we we really kind of discredit that.

So anyone wanting to read a really fascinating complex book, the fourth phase of phase of water is is excellent. But I always kept that in the back of my mind and I really optimized that.

And so, you know, that's what really caught my eye with the company I'm working for is that we're looking at going beyond the power of hydration, we're looking at creating biomolecules and these biomolecules, they've been research to help with inflammation.

So I'm going to tie that into because that was really a big part of my healing. So thanks for asking. – Yeah, I want to get into that later in the water specifically.

But before we do, maybe let's step back and maybe share with us with our audience. What your kind of your general framework for how you think about aging and longevity.

In other words, why do we age? Is it wearing out? Is it programmed or what, what's going on there, do you think? – Yeah. So I think that unfortunately we all age but we want to age. So it's kind of like how do we do it in the best way? How do we have a healthy lifespan, health, healthy health span? Um But you know, we, we all age. It's just that loss of the physiological integrity which leads to impaired function and then you have your increased vulnerability to death. So, you know, it's a, it's a prominent risk factor for many of our pathologies, cancer, diabetes, cardiovascular disease, neurodegenerative disease. As we age, we just get more, more at risk at, at these conditions. And so Um a paper that I really, really like, and I really look back at to kind of guide the way I think about aging is when that came out of cell in 2013. It's a little bit old but it's by Lopez and autumn at all. And, you know, he talks about the hallmarks of aging and it gives us an idea of what is going on because aging is not one thing if someone says, oh, I'm aging because my mitochondrial are getting, you know, old and rusty. Well, yeah, that, that's one of nine, you know, where there's a lot of talk about cellular sin.

Healing Foundations: Gut Health, Detox, and Hydration

S you know, is that, is that adding to aging? Yes, it is. But again, there's mostly nine, we're going to actually talk about nine because it's just a little bit easier because it just kind of covers a lot of bases and it covers the literature that we're discovering today, but they all kind of weaving together, but really a very underlying factor that we're all aware of is that oxidative stress that inflammation, if that's left unchecked.

The naturopathic philosophy says that inflammation is at the root cause of all disease. And I do believe that. And so I think it's interesting to look at that and have a summit based on, inflammation itself. – Yeah, we're finding with speakers like yourself and experts in the area. It's amazing how inflammation drives not only all the major chronic diseases that, that uh contribute to our lifespan but also drives aging ourselves. It's fascinating to uh to go over that.

And maybe if we talk about the, these hallmarks of aging, we could go through and, and speak about how inflammation is associated with each of them and what your approaches if any to deal with with each of these.

And of course, given our emphasis for this program and the theme is mind and body. If at any time, we can, we can see a chronic stress or psychological connection anywhere that resonates with you, we can mention that as well too.

– Absolutely. That's great. So going back to that paper again, the nine hallmarks that were proposed our genomic instability, telomere attrition, epigenetic alterations, loss of protein synthesis, deregulated nutrient sensing, mitochondrial dysfunction, cellular senescence, stem cell exhaustion and altered inter cellular communication.

So it sounds like a lot. But like let's let's kind of dig in, let's go clear, there will not be a quiz, right. That's right. I am a professor. So maybe if you really, really want to quiz at the end attention, but I'm just going to go into them like and make sure that they're digestible, make sure that you understand that that's a lot of technical words, but it really comes down to a lot of easy things that you can do to help slow these nine hallmarks. So the first one, again, genomic instability. So basically DNA is the blueprint for genetic expression. But the problem is is that it's constantly under attack. So you have these instructions that literally keep you alive, production of proteins, everything that you need for cellular respiration, vitamins, minerals that you know, make that D N A and make those proteins work.

But these free radicals, these um you know, pollutants, chemicals, pesticides, they all damage the D N A and the damages associated with aging because your cells just don't work as well. Um But thankfully, your D N A also encodes instructions on how to repair itself.

But again, we just get older and it doesn't work as well. And so a better strategy would be like go upstream and figure out, you know, where is all this damage coming from? That's number one, you have to just do the elimination, right? You just have to write down everything that you're smearing on your body, your shampoos, you know, clean your air and I know it sounds daunting. I know it does.

But again, you really want to drain the bucket, right? We really want to get to the, the balance where our body can handle the toxins that we're bringing in. But for me, for this one, again, it's all about elimination. It's not about taking a multitude of antioxidants. And I'm gonna get on my antioxidants soapbox for just a second here. So the way antioxidants work in the body is that their electron donors. And so we have a balance of oxidation and reduction in our body that's called redox. And we wanted to be in balance.

We don't want to have so much reduction and little oxidation because oxidation, although it sounds scary, you know, where the free radicals and it's chewing up yourself, it's used by the body to combat viruses and cancer cells.

So we want it in balance.

Why We Age and the Hallmarks of Aging

So when we take a lot of antioxidants, vitamin C, really well known ones, what happens is it donates an electron but then it becomes itself a free radical. Um And so it also in general, antioxidants will scavenge all of your free radicals.

Now, This can be harmful because there are some free radicals in your body such as hydrogen peroxide that actually has positive cell signaling functions in your body.

So you don't want to scavenge everything. Again, this is just balance, life is about balance. And so what I do is I employ the use of selective antioxidants because selective antioxidants has shown in a nature paper in 2000 and I believe it 13 showed that a component called molecular hydrogen actually acts as selective antioxidant, meaning it goes after only the free radicals that are deleterious in your body such as the hydroxy radical.

And when it actually donates the electronic scavenges that it's not itself. Now a free radical it just goes in does its job selectively so smart, so smart. And it's tiny, hydrogen is the smallest molecule on earth and so it can go everywhere in the body.

And again, I think that were tipped in the favor of more oxidation. Because what if I just said the after mentioned of toxins and pollutants and things that um using selective antioxidants helps balance that out.

And again, that is one of the major factors of aging. – Yeah, this this balance point you make is so, so critical. We're, we're seeing it um throughout the program with so many different speakers, the idea of homeostasis and balance, whether it's uh psychological balance with acute and chronic stress as Steve and other speakers have talked about or whether it's enter the mechanistic target of rapid mice and balance between being turned on and being turned off and just balancing all these other features. Before we, before we continue on that train of thought, you mentioned one thing I wanted to emphasize for the audience and that was the elimination, you mentioned an elimination diet, but it wasn't just a diet you want to eliminate also, you know, personal care products, skin creams, other things that can, can be toxins. Could you clarify that a little bit just you know what that process is? So they will know how to do it.

– Sure, I think of it as a load on your body, your your you have an al aesthetic load that that presses down on the ability of your body to function properly.

And so really when we're looking at the skin care products or we're looking at pesticides in our food or air quality. All of that really presses down on how well our body is able to fun and um and our liver capacity to detox in our kidneys.

And so what I'm saying, from that perspective is just be aware of how much you're taking in and this applies to stress too, right? Like just like you said, it's really more of a global view of your health is that you have to monitor what's going in in order to maximize that al aesthetic load that's pressing down, you just want to free it up. And so, you know, that can just mean inventorying the things again that you're using as personal care products. What are you eating?

You know, what are you thinking? Um a lot of that it will just help with that load. – Yeah. And you mentioned inflammation and how that is a that is a negative thing, at least chronic inflammation that's driving these things.

And then also you also mentioned that chronic diseases driven by inflammation and we can do, we can oxidation is, is a negative thing and antioxidants potentially are good, are good things if I got that, right? And then so do how do antioxidants work on inflammation? What's on inflammation?

What's the relationship there? Do they turn down inflammation? – Basically, they turn down inflammation? Yeah. And if you think about inflammation and the the inflammations, you know, we're really looking at balancing out the free radicals. So that's really what, what the antioxidants are used to, there used to try and scavenge that load.

– So basically, these hallmarks of aging that we're talking about. Um each of them drive aging and they're also related to inflammation, I assume. Correct.

Genomic Instability, Telomeres, and Epigenetics

And then presumably there will be antioxidants that can be directed at each of the hallmarks of aging as, as you go through them. Is it that clear cut?

– There's a lot of overlap, I would say that some do have um and we'll go through that, Rob will go through some of the particulars, you know, such as cellular senescence. You know, like what, what can we use specifically for that or what can we do?

But I think that just like the body, there's, you know, when we chop things up in telepathic medicine and you go to your kidney doctor and your endocrinologist, it's just we're not seeing the whole picture clearly.

So there is a lot of overlap and what we're doing is good for one homework, but then it's good for like six other of the hallmarks as well because it just lessens up the overall load. – Great. Yeah. So we've covered the genomic instability and what's next? – So what's next is the telomere attrition?

So telomeres just think of them as the caps on the end of your shoelace, that's, that's the D N A caps and they protect your D N A. But the caveat is that every time your D N A, what yourselves actually undergo replication is that those telomeres get shorter and shorter. And the problem is is that once they're very, very, very short, yourself can't replicate anymore.

And what actually spurs on replication is toxins and inflammation. They both spur on the cells you to replicate, replicate, replicate and that accelerates your aging process. And so we really want to employ the use of first again, go back, go back to your foundation, just eliminate out, try and lessen your inflammation. Have a good diet.

Don't pour chemicals and toxins into your body. But we also want to make sure that with the telomere length that will, that will preserve it. So you won't be replicating, replicating because just think like if you're replicating, that's, that's aging in and of itself. So there was a study that was done that was found that molecular hydrogen actually increased, increased telomere length.

And so a hallmark of aging, I just, I love hydration anyway. And so that's again why I work for the company I do because there's so many great things other than just the benefits of hydration that, that you can get with telomere lengthening.

There's also some supplements out there that can help with preserving telomere length. I like T A T 65 I believe has been headed a clinical study showing that telomeres can be preserved or increased. – Okay. And before we continue on the list of the hallmarks you're mentioning um, molecular hydrogen and, and water and that we'll talk about that more later, but just to set the stage that is going to improve inflammation right across many of these when we'll find out when we talk about it.

But just so people know that's tied to water somehow that we're going to be hearing more about. Right. – Exactly. Exactly. Right on. Okay. So carrying on with the third one, everybody, you're doing great.

Um, your test will not be that hard at the end. So keep on, keep on keeping on on the third. Hallmark is referred to as epigenetic alteration. So basically every cell in your body other than your red blood cells and your corn ified cells, they have that D N A.

But what makes a liver cell different from than skin cell? Like how do they know the difference between, how do I express this protein, how to express this? Like where do they get their identity?

And it's from that effigy gnome, it's from that epigenetic instruction. So you can kind of think of that as like again the instructions telling the D N A what to do like DNA is the blueprint and, and then the epi genome is like the contractor telling them what to do. And there's like a good side of this and a bad side of this. So your stress levels, what you're eating, what you're thinking, you know what, again, your toxic load that can all influence how your D N A is expressed that epi genome. And so again, the good news is, is that a lot of this is under our control, you know,

some of those, the DNA mutations that I talked about in the number one, some of those are not reversible but epigenetic alterations, they're reversible.

So um this is an important one because again, it comes down to like behaviors and if you're smoking and eating at fast food and you're under so much stress, you're going to age and this would be the underlying hallmark that epigenetic alteration, it falls under that category.

– Yeah, that's such a powerful interaction point. Some of our other speakers will be talking about how we can reprogram our Epp Egy gnome with psychological tools or, or interventions in lifestyle, with exercise and diet and, and other things. It's so fascinating there.

So, yeah, so those are, those are some key hallmarks. What, what, what else do we have to look at? – Yeah, what's cool. And this and this one too is this is, falls under the Sirtuin family.

So we hear a lot about the cert from like David Sinclair and Raspberry Trawl and N M N. But this is one of the genes that's under our control. Fasting can help with this gene expression. Again, molecular hydrogen can help with this expression.

But really, when we're looking at the search three and four, those are like little energy packs inside ourselves. So if you can think about that, like, that's important for staying healthy and young, having those little energy packets in inside of there.

So, um that's an exciting one that again, we have control over for sure.

Protein Homeostasis, Autophagy, and Nutrient Sensing

And then, um I think with this one, it really comes down to when we have those epigenetic factors that were not optimizing, which are under control like diet and, you know, we're packing on extra pounds and things that, that we really make sure that we're trying to optimize um not just um your body, mind, body spirit, but again, optimizing everything that we can under, under this one. I just love this one because it's all under our control. It's like, hey, here's the, here's the anti aging pathway and here's the aging pathway. So again, go down the aging, you know, it's just like treat your body like a temple, not like a tent.

– I like that quote. It's a great one. So the first, the we covered four of the hallmarks of aging, sort of the, I guess the primary hallmarks I think they wrote about it sort of in that they caused damage. Um sort of, and then the next hallmarks of aging, the next three, at least some people loop a lump them together as these are sort of responses to the damage caused by the first uh the first four.

Although, you know, it's very, very complex and honestly, nobody really knows these, this is just sort of the best attempt that people trying to understand a very complicated field. But go ahead.

Yeah, what's next? – Yeah, that's a great way to put it to. Is that like the next one is the loss of proteus stasis. So what is, what does that mean? And again, these are probably down the effects of the aforementioned one.

So loss of protein synthesis means that your body is a protein producing machine. And so we need a balance between how much we're producing, how many proteins because those are very important and then how many that we are, we're scavenging were cleaning up and that goes into the process of a ta Fiji to cellular cleaning.

So when you lose this balance, you literally, you can have all kinds of protein. You know, that are accumulating that are just think of that as like cellular debris.

Like you, you really can't have very good cellular processes going and when everything is there's just running amok with all these these proteins. And so one of the ones that I think that we think of with lots of protein homeostasis is that the heat shock proteins, the heat shock proteins are starting to get really well known because activation actually helps you correctly fold your proteins, try and balance that out, trying to gain back that loss of protein

synthesis.

And we hear about sauna ng with a heat shock proteins. But also again, I hate to say this but molecular hydrogen has been shown to help regulate those heat shock proteins. And then I just, I want to mention this too is that this one really ties in with age related pathologies like Alzheimer's disease, Parkinson's disease and cataracts.

And if you think about it, it makes sense. We have that the protest Asus and it's, we're not cleaning it up and you know, it's, it's mucking things up.

So another important one to pay attention to. – Yeah, our audience hasn't heard about heat shock proteins yet. Maybe you could clarify what those are. And, and like you said, you could tie it into the sauna and the hydrogen water too if you want.

– Yeah, one of the many benefits of sauna in and you know, it's called electrolytes, reduced water is that you will have a induction of these heat shock proteins. So what they do is they go and they can stabilize the correctly folded proteins. So it's like an insurance policy.

It's like your body actually made this protein, it is good. And so now we want to stabilize it. So we're just, again, we're going back to the beautiful balance that our body is able to do when it's not full of inflammation. And again, oxidative stress and that it just always on that, on that al aesthetic load. So it's pretty simple, you know, with the heat shock proteins, we don't have to go into, you know, the mitochondrial U P R mediated rejuvenation, you know, but, but really just think of heat shock proteins is really trying to amend this.

They do a lot of other things too. But I think that heat shock protein and then the ontology, let's just quickly go into Takaji. So Tasha, gee, I don't know if you have a guest talking about this, but in a nutshell, it's just cellular cleaning and just like spring cleaning, we need a mechanism and we do have a mechanism to go in and clean out all of the misfolded proteins, all of the cellular debris that we normally produce.

And again, that's called a tautology. It's, it's activated when we are in a caloric deficit. So someone I think has talked about em, torso enters anabolic is like stepping on the gas, you know, building proteins, building things. But Khafaji is cata bolic.

So it's breaking down things, but just as important, they're really important to be in balance. And there's things such as fasting that can up regulate your, your autopsy. Ji Ber Breen.

Again, molecular hydrogen can do it. A really famous drug that's very old that's coming back into, um, mainstream ish is rapid myosin and that's because it can help with the balance of Khafaji and enter. – Yeah. Yeah, we'll have several speakers that will be talking about Khafaji and rapid mice and, and these other things as well.

So that'll be good. We can expand on that. Any other the hallmarks that you you want to cover for today? – Yeah, I think um maybe mentioning the fifth. So I'll just kind of mention the last ones really quick in nutshell, deregulated nutrient sensing.

So, you know, yourselves have sensors that respond to the changes in your nutrient levels in your body, right? Because we don't want to let too much food in and we want to be careful because every time we're burning our food, we're actually creating oxidative stress, we're actually doing that.

So we want to have that balance. But what happens over time is your cells just don't respond. So, in a nutshell, like this is called the insulin and I G F one signaling pathway. So what I think of this one is, is that you have to be careful with how much you're spiking your glucose because you're just wearing these receptors out, you're wearing this sensing out.

So you want to be careful. And that's why, you know, the studies on caloric restriction are. So, so they're actually really good for longevity is because you're probably not pushing on that lever over and over and over again. So I just think that just will tie into someone talking about how important diet is an important balancing our blood sugar is

for that one. That's pretty simple.

So simple strategy again, is to just maintain a healthy diet. Exercise, get your nutrients in and, and you should, you should be, you should be good. Although I am remiss to say that one in three adults in the United States has prediabetes, which is absolutely scary and only 80% know that they do.

Mitochondria and Cellular Senescence

So, you know, if you're listening and you're like, oh, I'm fine. I got this covered. It's worth a check. It really is. When I was practicing, I always measure more of a full panel, fasting glucose, fasting insulin, you know, hemoglobin A one c going into those because we really want to nail this one for aging and inflammation.

We really do. Like I just said, when you're eating, you're creating oxidative stress. I'm not saying don't eat. But I'm saying, you know, I do a 16 to 18 fasting window everyday because it works for me.

But I really felt like that activated my Takaji, my blood sugars butter, my insulin is butter. So that's kind of a nut shell in that one. – That's such an important point about nutrient sensing because people were going to hear a lot of speakers in a program. But People wonder it's like, why if I fast, why do I live longer? You know, why does that affect longevity or if I stop eating sugar?

Why does that make people live longer? But it's really foundational. This nutrient pathway for the hallmarks of longevity. It's tied in, in so many different ways, – 100%. And then the next one again, very simple mitochondrial dysfunction. And so I think everything that we've talked about, you know, your mitochondria are not spared.

In fact, they are at, at more at risk because they don't have the, his stones that protect them. The D N A doesn't have the, the protection. So really, your mitochondria are very important and you want to make sure that your manager managing that oxidative stress.

When you're dehydrated, you actually will shift for that anaerobic metabolism, which is inefficient and you only get 3 80 P molecules. I won't test you guys on that one, but really, you want to make sure that you're protecting your mitochondria and it goes back again, foundations dietary, you know, stress, really making sure you're getting all of your nutrients because in your hydration status as well because your mitochondria just just don't work well.

And then my absolute favorite one. So I'm so glad we have time to talk about. This is cellular senescence. Boy, it sounds complicated, but basically when your cells hit the hay flick limit.

So they've multiplied all the times that they can, they hit this limit and they turn into senescent cells. Now, they're referred to, I don't love this name, but they're referred to as zombie cells and they're referred to by this name because they secrete SAS factors, SAS factors, senescence associated secretary phenotype. So, a SAS factor that is secreted from your senescent cells is super inflammatory, super, super super inflammatory.

So, looking at ways in, in with my job, we are in partnership with the Buck Research Institute and we're looking at how our specific water can help modulates.

In essence, because you know, when we're pushing those cells to replicate and aging or aging and then they hit that limit and then they go to be zombie cells.

Again, you just have these smoldering cells in your body. Again, inflammation. That's right there. So using strategies to help with cellular senescence is so cutting edge, I love studying it. Like every day a new paper is coming out about cellular senescence. – Yeah. And in your own personal journey, you've gone from practicing medicine full time to devoting all your time to this, your passion and understanding longevity and developing new technology within your your CMO at a new, at a new company. What, what sort of work are you doing there?

– Sure. So they brought me in to really aggregate all the data that we've done in partnership with prestigious universities all over the world. For 15 years, we've shown really positive effects in agriculture.

And again, let's go back and define what this technology is. So we know technology is a boron doped diamond electrolysis technology, it's patented. So what we're doing is we're taking the power of hydration and we're act, modifying and augmenting it and giving it even more powerful attributes. And so we're looking at those were studying the biomolecules. I've mentioned molecular hydrogen.

That's just one of the biomolecules that we have in our water. But the data that they presented to me when they were headhunting me just absolutely blew me away. And I think that we need, we need really savvy strategies, but water seems so simple, but yet it can be made into something that's even more powerful for help. So I just absolutely love what I'm doing.

I'm working with the Buck Institute researching against cellular. So in essence, we're building human clinical trials to show the effects of our water.

There's some studies that even show that it helps with stress modulation. I mean, right now, we have plenty of studies showing digestive health. You know, like regulation of body metabolize and body composition, blood sugar regulation. You know, I could go on and on about all the positive antioxidant status, we decrease markers of inflammation.

Hydrogen Water Technology and Clinical Research

But really, you know, again, my passion is to get people well, like I know what it's like to be bedridden. I know what it's like to be very, very sick. I needed strategies.

I needed a brain to think for me. I needed someone I can trust and I feel like I am that person. – Yeah, the research in the area of longevity is so challenging because it's difficult to get endpoints, you know, and so maybe you could talk a little about your clinical trials and some of the endpoints you're hoping for and what, what kind of results you're expecting to see or if you've seen any results yet you could share with us.

– Sure. So we've actually done an in home use trial in both the United States and in France and we've done a beta test and we, we found positive effects on again, digestion, skin health.

Just it really comes down to Rob like, what is your issue? Do you have joint pain? Do you have um you know, headaches, do you have X Y Z? And so when I say that we found positive effects, it's not like someone had nine things that it helped with, right? But it's kind of like you're my as um like where in your body do you have the we weakness? Because when we go back to the beginning of this talk, inflammation, we're trying to target that.

This will target that. So again, we're seeing um energy mood, some weight loss. Definitely modulation of appetite because people it's hard. We have chemicals that are, are robbing our body's ability to, to be tricked into thinking, you know, we need that hamburger, that fast food, but really hydration, you need to be hydrated to really satiate those pathways.

So again, it kind of just goes back down to two foundations. So, you know, we've also found with our clinical trials. As you, as you asked, we are in the midst of kicking those off.

We're gonna be look studying in healthy human beings. We're looking for structure function claims. So we're going to be studying the effects on skin. I'm also tying in H R V.

So stress management, I'm going to be tracking sleep with probably an ordering. Big fan of getting objective data, right? Big fan, right? To really help yourself.

And then we'll be doing a second trial on digestive issues. And also building in a lot of those inflammation, objective markers as well. – So you're going to be looking at blood markers also like CRP fasting insulin and that sort of thing. Where is it more generalized effects on the body that you're expecting to see? – We're going deep rob, we're going deep doc, we really are. You're gonna, you're gonna like that data when you go through it.

I mean, I'm coming in and I'm making sure we're hitting all the markers so that, you know, we really are, are displaying the power that our, our water has. So we'll have a lot, lot of blood urine markers as well. – That's so exciting.

When, when will that data be out? Or these trials often take a long time? – Yeah, they do. They're really expensive and they take a really long time. So I'm hoping for Q four this 2023.

So, yeah, so maybe by the time this is airing, we'll have 66 months, seven months until we get that data. But I'll definitely be out there shouting from the rooftops about our findings. – Yeah. Well we'd love to have you back for our next summit to talk about the results may be.

But let me understand. So this is just you talk about a water product. So this is a consumer product or we need a prescription for this or that would have looked okay. – Picture's worth 1000 words.

Thank you very much. This is a wheel bottle for human use. I actually give this water to my pets to, they prefer it. You just put in filtered water and you just press the button and then your water's restructured and the biomolecules are created which have amazing studies and we've gone through a lot of the positive effects on inflammation.

But very simple. Our website is just we-o.com.

Where to Find Dr. Halderman

So it's we-o.com. There's a lot of more information on there for people who want to take a look at that. – Yeah. And maybe we'll, I know we're almost out of time here. Maybe you could, you share the website, could you share how people can follow you on social media and find out more about you and the work you're doing? Yep.

– So, I have a big Facebook following like over 10,000 people. That's just Dr. Kelly Halderman. I'm on linkedin. I'm on it, Instagram at drkhalderman. You know, I think that I also have a website that's under construction.

So again, I feel like it's always under construction. There's always something I need to add to it, but I think it's easy to find me and please reach out, reach out, ask me all the questions that you have.

I really want to be an advocate for people, especially in this area. Like you said, Dr. Rob, we really need a good, strong minds, really digging into the validated research for us. – Yeah.

Well, this, this has been such, such a great conversation, Kelly. And I want to thank you for spending an hour with us and sharing your knowledge in this fascinating area. And also I want to thank you for the work you're doing in moving the field forward. Thank you so much.

– Thanks Dr. Rob. It's been a real pleasure.