Introduction to Dr. Terry Wahls

Welcome to the summit. I'm your host, Doctor David Jockers. And today I am interviewing Doctor Terry Wahls. We are talking all about telomeres and telomere shortening and how that relates to longevity.

So Doctor Terry Wahls is an Institute for Functional Medicine certified practitioner. She conducts clinical trials in the setting of multiple sclerosis.

In 2018, she was awarded the Institute for Functional Medicine's Linus Pauling Award for her contributions and research, clinical care, and patient advocacy.

She is the author of The Wahls Protocol A Radical New Way to treat All Chronic Autoimmune Conditions Using Paleo Principles, and the cookbook The Wahls Protocol cooking for life.

You can find her at Terry Wahls. She's a wealth of knowledge. You guys are going to enjoy this interview. So without further ado, let's go right to it.

Well, Doctor Terry Wahls always great to connect with you. You're a wealth of knowledge, and I love all the great work you're doing in the clinical setting, doing studies and really, you know, getting this information out and how lifestyle can impact our overall health or inflammatory, you know, just our overall response to inflammation in our body.

You're helping a lot of people with autoimmune conditions, with all, all forms of chronic inflammatory conditions. And today we're talking about telomeres and longevity.

And so let's start by just talking about what our telomeres and why are they important to look at. So hopefully everyone in your audience knows that we have a that is wrapped up in our chromosomes at the end of the chromosomes.

There's a little cap that protects the ends. And every time that cell divides, the cap is a little bit smaller, a little less effective.

What Telomeres Are and Why They Matter

And finally we get to the point where the cap is not doing its job, and the cell can't divide it anymore. The process of aging is that shortening of the cap.

Yep, yep. And so how do they measure that? Like what are people looking at when they're looking at that. And how is it relate to our process. There are some commercial labs out there.

So the public can now get your telomeres measured. And then many of these companies will give you a report. This is your telomeres. This is your. It's another way of measuring biologically how old the person is.

And the big question is so I have my chronological age. And then there is my biologic age based on the measurement of the telomeres. And what you want to know is that your biologic age is younger than your chronological age.

But many, many, many people in the American space are discovering that their biologic age is quite a bit older than their chronological age. And what they're experiencing is a accelerated aging.

And the reason part of the reason I care about that so much is people with multiple sclerosis. People with

autoimmune disease were beginning to realize that part of our disease process is accelerated aging, and we can measure that with the telomeres.

Yeah, absolutely. And you know, I know your story of overcoming debilitating mis, but I don't know if all of our listeners do. And so can you dive into that. Yeah.

So I'm an internal medicine doc. You know, I'm in clinical practice. Everything's going well. I have a couple of young kids. And back in 2000, while I'm out walking with my wife, my left leg gross, weak dragging it, you know, I hop home, I see the neurologist the next day, and he looks at my medical record and says, you know, 13 years ago you had an episode of Division in your left eye, and now there's weakness in your left leg.

If you walk a long way and so said, this could be bad or really, really bad. So we begin the work up. And at that point, it takes about three weeks to get through all of the testing.

And I'm thinking about the fact I've had 20 years of worsening electrical face pain due to try general neuralgia.

Terry Wahls' MS Diagnosis and Decline

So I'm thinking, okay, I've got a progressive disease, I don't want to become disabled. So I'm secretly hoping for a fatal diagnosis. Three weeks later, I hear multiple sclerosis.

I do my research. I find the best EMS center in the country. I see their best physician. I take the newest drugs. Three years later, I hear tilt, recline, wheelchair because I've been going relentlessly downhill.

And, you know, that's when I decide I'm going to go back to reading the basic science. And I decide that mitochondrial dysfunction drive the disability.

I take a supplement cocktail for my mitochondria, and my fatigue is a little bit better, but I'm super grateful that I'm a little bit better. I continue to decline.

By 2007, I cannot sit up anymore. I'm going to tilt recline, wheelchair. I have a zero gravity chair from which I work. I can take a couple steps with two walking sticks, my trigeminal neuralgia as relentlessly worse, I begin to have brain fog.

My boss assigns me to a new clinic I have to start in January, describes a job, and I have to see patients without residence. So I probably can't do that job.

I'm really quite depressed. The next week in my packet for the researchers supposed to review for the committee that reviews research. So a study that uses electrical stimulation of muscles, I review that for people who are paralyzed, who are never going to walk.

So I make an a point with my fiscal therapist. I ask, could I try this? He gives me a test session. It hurts really bad, but what's over? I feel great.

And so we add electrical stimulation of muscles to my little tiny workout that I'm doing every day. Then I have this big, a high. And David, I laugh at myself for how long it took to have this ahar.

What if I take my paleo diet that I've been following for five years, and I redesign it based on this long list of supplements? And that's a few more weeks of research, but I get that sorted out.

It's so now I have a very, very structured paleo diet in January comes and I have to go to this new clinic. In the first two weeks I've just watching my partners.

The third week I start examining patients and, you know, at the end of the week, Friday comes and I tell my wife, Jackie, you know what? That definitely wasn't too bad.

I think I can do this. And my, when I go to see my physical therapist, he says, yo, Terry, you're definitely stronger. We're going to advance your exercises.

So I start doing them twice a day. And it is remarkable. Within three months my fatigue is gone. My pain is greatly reduced, my mental clarity is improved.

I'm clearly stronger. I begin walking in the hospital first with two walking sticks and with one, then with none. And then in May, for the first time in six years, I'm able to ride my bike again.

You know my, when I do that, my kids are crying. Jackie's crying, I. I, you know, I get tearful even now reliving that moment. And after that, you know, I bike a little bit more.

It will change the way I practice medicine. It will change the focus of my research. And I've since made it my mission to teach clinicians how to use the concepts that I've created, and to do the research that shows diet and lifestyle have such a powerful impact.

And by the way, so I could not in 2007, I could not sit up in 2024. You know, I'm strength training. I'm carrying 60 pounds around, walking around. I'm carrying 30 pounds walking up and down stairs.

I can do vertical jumps again, not very high, but I can jump and I can now jog. Yeah. And for all the listeners, if you can, if I can come back from such profound disability, it is easy when you have secondary progressive Ms..

There is no recovery. It's just are you going downhill slowly or very, very rapidly. And so and we've done clinical trials since testing my protocols and others, and we've been able to achieve remarkable success in other people with progressive Mis and with relapsing remitting multiple sclerosis.

Yeah, amazing. And so, you know, pretty safe to say that chronologically, you are 17 years older than you were in 2007, but biologically you're quite a bit younger.

Your body is obviously much more stronger, more more resilient. And, you know, you're really in a place where you're thriving in general in your health.

And so let's bring bring that back to telomeres. Did you ever have your telomeres tested? Yeah. You know so I want to tell a couple more sort of fun things.

There's some online forms you can complete to estimate your biologic age. And so when I was 52 I went back and put in my age and all those parameters of what I could do when I was 52.

And my biologic age in that online calculator was 69.

Diet, Lifestyle, and Reversing Biological Aging

That was in 2000. That was around. That was in 2007 at age 52. So remarkable. Older then when I redid that, when I was 65, my biologic age was what I could do when I.

65 was now 45. Yeah. Now I've not redone that since, but it's probably still pretty young because I can do more push ups, I can lift more weight, I can now jog.

And I couldn't do those things when I was 65. And you're 69, how old are your now? I will be 69 by the time this airs. Okay. Very, very soon. That's really and that's really awesome.

The fact that you can do more push ups now, you're stronger now than I'm strong. I can do vertical jumps now. I can jump forward. I can jump side to side. I can jump backward.

Not high, not far. Sure, but it was not that long ago. I still couldn't jump. Yeah, and I can jog now. And I had to

contain myself. I was jogging two miles, but I stumbled in like, no, I have to not not jog so far because I don't want to risk stumbling and breaking bones.

Of course. Yeah. Now the question of telomeres, because I know miss is a disease of accelerated aging. I say, well, you know, I should check my telomeres and see where I'm at.

And I was mentally preparing myself, David, like, okay, you might be 15 years older than chronological age. Don't don't get freaked out about it. And if you are, you'll just check it again in a couple of years.

See if you're getting younger. So I got my report and I was four years younger than my chronological age. And of course, then they gave me a bunch of diet recommendations I disagree with, so I never I repeated it because I thought, okay, you guys don't really know what you're doing.

Yeah, yeah. But clearly the diet and lifestyle, if we sort of think about the fact that biologically, you know, I was a 17 years older than my chronological age in 52.

So the fact that I've covered all of that acceleration of my biologic age, and I'm now younger than my chronological age, is truly remarkable, because you would expect my biological age to have been, you know, still 15 to 20 years older than my chronological age, because that's what you see with a progressive Mis.

Once you hit the progressive phase, you are just so completely screwed. If you're you were your body was just undergoing high levels of inflammation, tissue damage that was taking place, high levels of inflammation, oxidative stress, all sorts of things that were really pruning up my telomeres.

But what I want the audience to know is there's this wonderful enzyme that can repair your telomeres. And so there's probably millions and millions and millions of dollars being spent on can we make a drug to repair telomeres?

We all have the capability of repairing our telomeres, but it's really through modifiable lifestyle factors. And you know, the fact that for years I've done ketogenic eating and I've also done fasting.

So when I was younger I could do water fast. Now that I'm sort of older, I don't want to risk losing muscles. So I don't do the five day water fast that I did when I was quite a bit younger, but I still do fasting strategies, I still do ketogenic strategies, and I do red light cold showers, ice baths, and I'm working on my jumps.

We got to keep working on my jumps and doing my hits. Yeah. So you've got a whole regimen that you're doing now. And so what was your diet and lifestyle like?

Let's say let's say, you know, 2007 and before that, and let's compare that to your lifestyle once you started really healing. So I grew up on a farm.

We had plenty of vegetables, meat as some processed food, but mostly we cooked using ingredients. So great diet. Went to medical school, was taught that fat is evil plus a plus.

I also went through a period where I didn't want to eat my friends anymore because I tend to farm kids, so I became a vegetarian. My parents told me I was ruining my health, which made me dig in my heels even more.

Went to medical school, learned that fat is evil. So then I went a very low fat vegetarian diet. A lot of beans and rice, plenty of vegetables you would, and cooking from ingredients so it would look like a very hard, healthy, great diet.

But I also had a lot of a whole wheat breads diagnosed with miss, I mean, and 90s you were told that was really healthy. I was told that was really healthy.

That's right. I'm diagnosed with multiple sclerosis in 2000. The only book out there is The Swank Diet, and that's a

low fat diet. So I think, okay, I'm doing the right thing.

2002 my conventional neurologist introduces me to the paleo diet and the work of the group Direct Ms.. Charity out of Canada. And that was really knew the paleo diet was was discussed back then.

Yeah. So 2002 after prayer and meditation and both my parents had died by then. So I was in my head telling me that you're right, maybe the vegetarian diet was bad for me.

So go back to eating meat. I continued to decline, but I figure it might take me several years to recover because I clearly had a lot of damage to my brain and spinal cord.

Then I discover functional medicine. I do my own research. I have a long list of supplements. Then I had this big high like, what if I get all these ingredients from my food?

So a fair amount of research to restructure my paleo diet very specifically. I still take my supplements, all this food, and it's super interesting. It's what I do that this dramatic, dramatic speed of recovery happens.

And, you know, I still take a lot of supplements. I still do research. I keep reading the the latest basic science, and I read the clinical trials and I'm reading the longevity stuff.

And I realized that, you know, the food that you and I eat, we adjust it with our digestive enzymes and then our microbes further digest our food and we get the metabolites back.

And so it's probably a combination of the food I eat, plus the microbiome that I have that determines the health outcomes from the food. Because, you know, in our clinical trials, we measure the microbiome and we measure clinical outcomes.

And some of the things that we saw super, super interesting, the microbiome could predict. Are you going to respond well on the swank or well on the modified paleo or wahls diet?

And so it may well be someday that when our patients come to see us, David, that we will get saliva, maybe a rectal wipe or rectal swab that the patient will do on themselves, a little bit of urine, a little bit of blood, and we'll send that all off.

And then in about two months, you and I will get a report and we'll be able to say, okay, here's your genetics, here's your microbiome, here's your current nutrient levels.

These are the supplements that I think would be helpful. And these are the two diets that you would not do well with. Here are the 2 or 3 diets that you would do well with.

And this is the 1 or 2 diets that we think would be the very best. And then it's a conversation of, given your culinary preferences and your family's point of view, which of these diets can use successfully implement so highly personalized, highly personalized, and would ideally get them with a health coach to help them?

Personalized Nutrition and Autoimmune Care

You set goals, check in, set a new goal, check in, set a new goal, and make progress towards the diet plan that they've decided on. And the other thing I also notice in my practices, we may start with the Mediterranean diet because that's the easiest place to start.

If you're in the standard American terrible that once they're doing a little bit better on the Mediterranean diet and let them know when you're ready for the next level healing, come on back.

And some folks, the Mediterranean diets enough. They weren't that sick. And that's okay. I have some folks who are so, so sick. They're like, I want to go straight to the hardcore, most effective.

And I know it's hard, but I'm willing to. That's what I want to do. Yeah. So it's really precise to what the person wants, what they can achieve. And we have a negotiation as to what they think realistically, they and their family can implement.

Yeah, I think that personalization is really key. I mean, there's a lot of, you know, different nutrition plans out there. There's some people that thrive on a vegan diet.

And a lot of people like you and I included that. It actually was part of our, you know, process of actually getting getting sick. And then there's people that thrive on a carnivore diet.

And I always think about it like a bell curve, like on one side, you got people that do really, really well on little to no fiber. And then some people do really well on very, very high fiber.

And most of us are more in the middle where, you know, we need more of a combination diet, good balanced diet. But, you know, you got some of the outliers that do really well on kind of these more, more, you know, strict diet, plant based, you know, strict diet or carnivore diet.

But again, most of us more towards that the middle omnivores and need a balance of all of it. And I know with your with the diet that you use with autoimmune conditions.

Right. You're also removing the most common food sensitivities that could be, could be irritating the gut lining and driving up inflammation in the body in my clinical practice was I was going through this transformation.

I'm in the Veteran Affairs health care system and so no fancy functional medicine testing. We had some basic primary care labs. My real instrument was behavior change.

How I inspire people to do the work, how we then help them with basically a physician and dietitian supervised elimination diet. And what I discovered was, man, I had fabulous, fabulous results.

There were probably about 20% of folks who we couldn't help that. I'm thinking if we'd had access to a more extensive functional medicine panel to really dial in the nutrients, really dial in the food sensitivities, I probably could have gotten that 80% to a much higher level, 90 or 95%.

Yeah. And there's also, you know, a couple other conditions, like, I know I've had people where put them on a great diet, things like that, but they, they were living in a house with mold.

Right. Or they had, you know, gingivitis or root canal that was kind of dropping endotoxins into the bloodstream. So there's a couple of these other factors when you should be the foundation of our plan.

There are some of these other, you know, contributing factors that we got to look at to correct. And, you know, part of what my message to my audiences, it depends on your resources and how much testing you want to do.

I know some folks are happy to spend ten, $20,000 of testing, but they can't spend the emotional capital of changing their diet and lifestyle. Yeah, and so that's a big conversation I had with folks is the first question is, can you spend the emotional capital to improve your diet in your lifestyle?

If you can't come back and see me when you're ready? Yeah. I'm not, I'm not I don't feel good about spending thousands of dollars for lab investigations.

If you really pre contemplated with making any kind of diet and lifestyle changes because supplements are not going to solve your problem. Yeah for sure.

I mean really 80 to 90% of your health results are going to come from the lifestyle changes. And so supplements just kind of give you a bump in the right direction.

But it's the lifestyle changes that are really going to make the biggest difference. And so you had mentioned a number of things that you were doing. You talked about, you know, doing cold plunges and getting in front of red light.

What are some of the, the, I guess you could say, the most well studied disses that somebody could put into action to help improve their biological age and reduce telomere shortening and improve their overall quality of life.

So step number one get rid of the ultra processed foods, the sugar, the white flour, even the paleo friendly versions. So and then step number three, be sure your nutrient density is maximized in their several health plans to do that.

Then step number four. I'm going to tell you meditation and mindfulness. So many studies tell us that regular meditators are really quite profound. And if you can't deal with your diet, then start with meditation.

So those two are really high, high results. Next thing exercise and movement. The time you spend sitting very very inflammatory accelerate the age. So stand standing desk so good walking desks are better.

So that low level walking jumping. If you only have ten minutes to exercise work and see if you can jump for ten minutes, that would be super, super helpful.

And then expand your temperature tolerance. More heat, more cold. But many of us live between 68 and 72 degrees. In that narrow temperature window. Again, it is disease promoting.

So expand your temperature tolerance at a pace that you can manage. We're supposed to have a little bit of ultraviolet light so we can make vitamin D, and if we had a little bit of ultraviolet light every day and didn't burn, we wouldn't have so much skin cancer.

It's the burns that accelerate the skin cancer. And some red light is really, really good for our mitochondria. Another thing that I might throw away if you're going to do supplements, you know, vitamin D vitamin, I would think about Bruce Ames.

Brilliant nutrition scientists said that he had 40 key nutrients he identified for mitochondria health because mitochondria drive aging in nudity generation in the brain.

And so I'll sort of give you his top level there by D plus vitamin K all the B vitamin K. Would you are you referring to K2 k2. Yep. Because K1 is pretty easy to get from diet and you can make K2 if you have the right microbiome.

Key Lifestyle Strategies for Longevity

Right? So that's a big if if you're eating grass, fish, meats, wild fish, you're getting K2 in the meat. Most of us are severely depleted in K2. People with miss we are severely depleted in K2.

So I put my patients on vitamin D3 plus K2 either in a combination or extra K2. Most people don't know that our vitamins act with mineral cofactors, and easily 80% of us are have diets insufficient in magnesium, 90% insufficient in chromium.

Selenium is not quite so high. That's about 15. Iodine is 15. And so if all these trace minerals are cofactors for a wide variety of vitamins, and the vitamins interact with one another.

So Bruce Aim said, take a multi bite. Take a multi mineral. Take coenzyme Q, take it B complex. You'd also recommend NAC. And he had carnitine creatine.

And then he talks about carotenoid supplements as well. So. You know I think nutrients are are super powerful. If you have a chronic disease you have a deep nutritional hole in your tissues.

So fix your diet, get help with someone like Doctor Jokers or myself to help you design a supplement program to help you get out of your ditch a little more quickly.

Yeah, that's really good. That's so key. And some of those things that you mentioned as well, like for example, the exercise you talked about changing, getting out of your normal temperature range.

These are actually stressors on the body. We call them medic stressors because they're stressors that are ancestors would have faced or ancestors would have been in a lot of heat in the summer, and they would have been at, you know, at times in a lot of cold.

So they would have had these exposures if they wanted to bathe, you know, they didn't necessarily have warm water. Typically. It was usually jumping in like a cold lake.

And so this kind of short term or medic stressor challenges the mitochondria and actually will stimulate Mitford where we break down the old damage mitochondria and we regenerate new, healthier, more stress resilient mitochondria.

But the key caveat there is you need the stressors. So you need to get uncomfortable, but you also need to recover properly. And that's where good sleep nutrients.

You mentioned meditation. So good breathing to balance your nervous system. So that's key. We need stress but we need great recovery as well. Yes. You know what?

I was in college, I was an athlete and I loved working out, I love training, I did martial arts, I trained really hard and I failed to recover. And so I'm sure that was part of and I didn't realize that I was accelerating my disease process.

Yeah. And that's really common. You know, I used to be a personal trainer. I would see so many people that, you know, they were exercising for hours a day, but they weren't sleeping. Right. They'd stay up late at night.

Beyond electronics, really poor sleep quality. A lot of us do this when we're younger. Bad diet, all of these things. So their recovery was really, really poor.

And, you know, over time these individuals would overtrained, they'd be burnt out, and it would accelerate the aging process. So, you know, everything needs to be balanced.

You had mentioned starting with meditation, starting with mindfulness, right. Getting that circadian rhythm dialed in, that's, you know, kind of the foundation getting the diet.

Those are really the low hanging fruit. And then we start to implement some of those stressors. I think that's super key. It will certainly help us out stress recovery.

And you know, my population is chronically ill. And so I talk about you do a little exercise. Can you get recover back to your usual self within two hours.

And if you can't the dose of what you did was too big for you. So you need a smaller dose and now you'll figure out the frequency of the exercise. Is it every other day at first.

And so it's yes I want you to exercise. It will be very helpful. Can you recover within two hours to your usual level of energy for you? Then that was the right dose.

Yeah. I was going to say, I mean, with where you were at with the progressive miss to the point where your wheelchair bound and you said you had this very small little exercise routine that your PT puts you on.

I mean, you started from the I mean, even walking out to the mailbox, you couldn't do. Right. And there's a lot of people I couldn't do that. Yeah, there's a lot of people out there that are that are at that point that will.

Exactly. And even if you are, we will turbo scooter bound use your walker. There's more recognition in the miss world that we want you exercising. And we want to send you to a physical therapist who understands and works with other Miss patients so they can help you design a exercise that is correct for somebody who's wheelchair dependent, scooter dependent, walker dependent, and they exist.

And, you know, that was the one thing that I, that I did correctly with my misdiagnosis. It was shocking. My physical my did not send me to physical therapy.

Now fortunately I set myself I said okay, I you know, I need to be exercising. And so I ran and as long as I could run and I started swimming as long as I could swim, then when I wasn't coordinated enough to do that, then I just did water aerobics.

Small impact. Smaller. Yep, yep. And and I kept my pool unheated. So it was cold. It was, you know, I was giving myself one hell of a hormone. Absolutely. But you were able to recover. That was.

But I was able to recover and and I could tell that I felt really, really great doing my exercise in that cold pool. Yeah.

Daily Routine, Recovery, and Sleep

You know, that cold water really releases a lot of endorphins, and a dauphin's make you feel good, right? So they're like natural opioids. They crush pain, you know, so you don't experience the pain.

They actually boost serotonin, dopamine. So you get kind of this feel good mood raising, you know, people that are dealing with perhaps depression or lethargy.

They notice a big improvement in their food symptoms and just overall happiness, right when they get some level of cold exposure. So, you know, in your mind it's you're like afraid to go in, right?

If it's a cold shower or cold pool or whatever it is. But you know, you come out of there 30s 60s later, whatever it is, and you will feel a difference.

Right? It's quite energizing. Yeah, absolutely. Now let's talk about let's finish up with kind of what your lifestyle looks like. Now let's take us through a day in your life.

Obviously you're you're you're doing studies, you're working right. But you're also training your body eating. Let's go through that. So one of the things that I, that I did in 2016, I retired from the VA.

I work half time for the university at half time, running my business, teaching the public and clinicians how to do what I do, which was just a wonderful, wonderful thing for me.

So I can get up, I'll do a gratitude meditation. I will do my workout, which might be a vibration plate workout, strength training, aerobic training with a jog around the neighborhood, or a bike.

Then I will do a red light sauna with near infrared light, and I'll do that for about 45 minutes. Then I will sit on my deck in the sunlight, looking at the sun with my eyes closed so I get that nice light on my face.

Then I'll come in. I'll take a cold shower and start my day. Now that that whole routine that I just described as a two hour safe care routine. Now, occasionally I've got stuff happening and I can't get all of that done.

And so I may just do an abbreviated workout and skip the sauna. Then in the evening, I like doing. I have a post-doctoral magnetic field generator, so I'll do a meditation and magnetizing in the evening I will read the quiet my mind, and then I will do a gratitude meditation to fall asleep.

In that gratitude meditation, go through the various phases of my life and you know I'll pick a face. Maybe it's thanking my parents for taking care of me as an infant, or as a toddler, or my grandfather who gave us our first

pony, or my colleagues who supported me during residency, my early research career.

So I go through some events in my life and thanking the people, or sometimes the animals, sometimes the places. And that's how I fall asleep. That's a great routine.

I think most people are deficient in gratitude. Right? That's a really powerful deficiency, unfortunately, in our society. So having some sort of act, some sort of regular intentional practice around that, I think is so powerful and, you know, reading before bed as well, most people don't realize.

But reading it obviously in a dim, you know, with lights dim you do you have do you wear blue light blocking losses? So what I do is I redesign the light in my home so that we just have red lights on.

Oh, perfect. So you don't need to actually where the glass. I don't need to do that. Yeah. And then I read my red light. Yeah, yeah. And then red lights kind of like fire.

So it's like what our ancestors would have been exposed to, which doesn't block the melatonin like blue light, which is what most people in their houses.

When you turn on lights, anywhere you go, street lights, it's all blue light, which suppresses your melatonin release. And actually reading before bed has been actually associated with better quality, deep and REM sleep.

So obviously reading something that's interesting. Fascinating, right? Calming. Not like reading like a horror story or something, you know, it would have to do is I can read fiction during the day and my son at night.

I have to resist reading fiction because then I don't want to, you know, I want to keep reading and then I otherwise I have historically would start a book, and I just read it nonstop to the end.

I and reminds me of my wife. My wife is on that before too. So, you know, I remember reading a lot of Tolkien that way. Yeah, blasting through it. That was super fun in college.

Yeah. Yeah, absolutely. Yeah. I feel like I always sleep so much better when I'm reading and it's like I'm reading and I'm enjoying the content, but then it's like hard for me to keep my eyes open and I'm like, all right, I think I'm ready.

Right. Book down. So that's a wonderful, wonderful way of going about it. And the proofs in the pudding, I mean, here you are, you're 69, you're just about 69 years old.

And, you know, you're working out, you're going out, you're running. You just ran two miles, you know, so there's not many people at that age that are actually doing that.

And you're walking the walk.

Closing Thoughts and Where to Follow Terry Wahls

And, you know, a great example for so many people, and really, you provide hope for so many who are dealing with chronic, debilitating conditions. And so and then obviously you're also on the front lines doing research public, getting this research published and reshaping the way that we look at chronic inflammatory and autoimmune conditions.

And so Doctor Wahls, you're you're a health hero. And, you know, I just want to acknowledge you for that last words of hope and inspiration here for our audience.

Well, I'll give a couple of pitches. Follow me on Instagram because you get to see what I'm eating and doing. People really enjoy that and come to our website.

Terry Wahls would love to have you join our newsletter there. Wonderful. Well, thanks so much Doctor Terry. Can't wait to talk to you next and keep up all the great work.

Be blessed. Thank you.