Rebuilding the Brain Through Food, Fasting, and Movement Transcript

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Introduction to Terry Wahls and the interview topic

Welcome back to the Heal Your Brain Masterclass. I'm your host, Doctor David Jockers. And today, I've got the honor of interviewing Doctor Terry Wahls.

We're talking about advanced nutrition for autoimmune disorders for things like multiple sclerosis and other neuro inflammatory diseases. A little bit about Doctor Terry Wahls.

She is an Institute for Functional Medicine certified practitioner. She conducts multiple trials in the setting of multiple sclerosis, and in 2018, she was awarded the Institute for Functional Medicine's Linus Pauling Award for her contributions in research, clinical care, and patient advocacy.

She is the author of the bestselling book The Wahls Protocol A Radical New Way to Treat All Chronic Autoimmune Conditions using Paleo principles. She also wrote the cookbook The Wahls Protocol Cooking for life.

You can find her at terrywahls.com. And we're talking again about advanced nutrition for autoimmune, M. S. and neuro inflammatory diseases in particular, we're going to talk about how doctor Walls herself overcame debilitating multiple sclerosis as well as trigeminal neuralgia.

Her story is really inspiring. You're in for a treat with that. We're also going to talk about key food and lifestyle triggers for autoimmune and neuroinflammation, the best nutrition strategies to reduce autoimmune conditions, and a study results.

The study that she's been working on using various diet strategies for autoimmune conditions.

Terry Wahlsu2019 MS diagnosis and early decline

You guys are really in for a treat with this interview. So without further ado, let's go into it with Doctor Terry Wahls. Well, doctor Terry Wahls, great to connect with you here.

And you've got a really inspiring story on your healing journey. And so I would love to to get started with that. So, you know, I'm an internal medicine physician, and it was in 2000 when I developed weakness.

My left leg. Susan Rogers, who tells me this can be bad or really, really bad. And so for the next three weeks, I go through the work ups, and I learned I have a lesion in my spinal cord and one on my brain, and I have abnormal spinal fluid.

So I'm diagnosed with relapsing remitting multiple sclerosis. I, do my research. I find the best ambassador in the country. I see the, their best physician take the newest drugs within three years.

I'm going to tilt, recline. Wheelchair. I'm 48. My son is 11. My daughter's eight. And that's what I'm asking myself. Am I doing all that I can? I start reading the basic science.

I decide that my the kind of function, that is needing the disability. I create a supplement cocktail to support my mitochondria, and that's very helpful.

It does reduce my fatigue a little bit. And for that, I'm super grateful. My decline slows, by 2007. I can no longer sit up in a zero gravity chair with my knees higher than my nose.

I've been on the paleo diet for five years. I discovered a study using electrical stimulation of muscles. For people who are paralyzed, who are never going to walk again.

I, convinced my physical therapist to give me a test session. It hurts like hell by the way. But when it's over, I feel great. It says it's the endorphins from the electricity.

And so we add that to our physical therapy, which, by the way, I can do only ten minutes of exercise. Because if I do any more than that, I can't function, go to work.

Fortunately, my mind is still clear. So I'm still seeing patients or the residents are seeing patients and staffing them with me. I'm, reassigned to the traumatic brain injury clinic.

Stroke that job in January. Without residents. Yeah, they describe the job. I know that I won't be strong enough to be able to do that. So, that's, very difficult.

I discovered the Institute for Functional Medicine that they have a course on neuro protection. I take that course. I have a longer list of supplements for my mitochondria, which I add.

And I've been doing the optical stimulation muscles as part of my rehab ten minutes every day. And then I had this really hall and David, I laugh at myself.

It took this long to have, but, like, what if I redesigned my paleo diet based on all the supplements? Like where where those nutrients are in the food?

So it's a few more months of research. I start this new way of eating. In December 26th. And so now it's a very, very structured paleo diet. I the first to January comes.

I have start going to try Granger Clinic. The first two weeks I just watch my new partners examine the patients. The third week of January, I have to start examining the patients.

And I come home on Monday and I say, well, you know, that wasn't too bad. And I ask, could I sit in a regular chair, which I've not done in years?

Diet redesign, rehab, and dramatic recovery

So I sit in a regular chair for supper with my family. Big. This is a month after starting the updated the updated paleo diet. Yeah. Yeah. That's a very big deal.

Yeah. And then, at the end of the month, my physical therapist says, your chair. I think you are getting strong. Let's have you do, ten minutes twice a day for your exercise.

And then we go to 15 minutes twice a day, then 20 minutes twice a day, then 30 minutes twice a day. And then I start walking with walking sticks in my hospital.

Stunning. My colleagues. Yeah. And then I start walking with one walking stick and then with none. And then I walk into my neurologist appointment and they're like, oh my God, what happened?

And, he, transitions me off. The EMTs, which is, really quite remarkable. And then, on Mother's Day. So that's literally just five months into this new way of eating.

I want to try riding my bike, which I haven't done in five years. And so we have an emergency family meeting. Jackie tells my 16 year old son who's six foot five, you know, big, football player.

You run alongside in the left. She tells my daughter Zeb, who's, 13. You jog on on the road and she'll follow. We all get into position. I get on my bike.

And I bike around the block, you know, and that big 60 year old boy. And he's crying. The 13 year old Debbie, she's crying. Jackie's crying. And and I still I still cry.

Even now when I realized that moment. Because, you see, David, when you have a progressive neurologic disorder, you let go the future. It wasn't until I got on that bike and I biked around the block that I could ask.

Well how much recovery might be possible. And you know I bike to a bit further every day. In October Jackie signed me up for the courage ride. So we did 18.5 miles.

Once again war crime. It fundamentally changes, I think, about disease and health. It will change the way I practice medicine, and it will change the focus of the clinical research.

And, you know, since that time, we've been doing clinical trials. I've been teaching clinicians. I've been teaching the public that, yes, there is a lot that we can do that will change the course of our disease.

Yeah. Such an inspiring story. And, you know, at that period of time when you were experiencing this, nobody had ever seen somebody with progressive, debilitating multiple sclerosis actually improve.

Like the hope was that we can just slow down the progression. And that was really the hope. The the goal is you you take these incredibly toxic drugs to try to slow the decline.

And I was thrilled to take those drugs because you're my hands still worked. I can still feed myself. I can still wipe my own butt. And, you know, those are really valuable things.

Yeah. Yeah, definitely. We take for granted, you know, when we're healthy, we take for granted all of these daily life activities. We don't think about it.

But when you've got a condition like that, every little thing that you can do on your own is a big deal. Is a big deal. Yeah, absolutely. And so. And I'm sure your doctors, obviously they were just shocked seeing that, you know, they they were shocked.

You know, in my, treating neurologist would eventually become a member of my study team. And when we did that first trial to see if others with progressive multiple sclerosis could implement this complicated regimen that I've done.

So that's the feasibility part. Then the safety did we heard it in well along the way. And then the third question was what was the effect size on quality of life, walking function.

And we saw that we could have this remarkable effect on fatigue, quality of life in that half of those folks had improved walking and hand function. Yeah. It's amazing.

And obviously you detail a lot your story and your protocol in your book, The Walls Protocol. If you guys haven't haven't checked, that out's been out for a while, but she did a really great job with that and just outlines it all in the walls protocol.

Clinical trials and diet strategies for MS

And then ever since you wrote that book, you've been doing a lot of clinical research and very involved in that. What are the most impactful results that you found with your colleagues?

Well, so we've studied the ketogenic diet, the paleo diet, a low saturated fat that we find that, and of course, usual that we find, as usual that things will progress.

You'll have worse fatigue, lower quality of life. And if you stay with that, over time, your walking function will deteriorate. If you, follow the keto diet, the low saturated fat, the walls that, we can, anticipate, reduce fatigue, improve quality of life.

Right now, of those three diets, the modified paleo diet, sort of what you might think of as level two of the walls that,

that has the largest effect size in terms of reducing fatigue, improve quality of life.

There are other studies that are out there that show that Mediterranean diet is also helpful. And, there's a very small study with intermittent fasting, showing that that is very helpful, as well, calorie restriction, which is reduced calories for, for everyone, improves, a bunch of markers for aging, improves insulin sensitivity.

But in the world so far, calorie restriction, does not do as well, in part because it's harder for the most patients to keep that going long term. They do, it's easier for them to do intermittent fasting, easier for them to do time restricted eating.

Yeah. That's what I found as well. Just from a compliance perspective, intermittent fasting seems to be a lot better than a long term caloric restricted diet.

Although doing short term caloric restricted diet like a fasting mimicking diet or something like that seems to have great compliance. But long term doing it for weeks can be tough.

It's very hard. You know, biologically, it's a, hunger is a tremendous driver to eat. And it's, we can't voluntarily keep that up the rest of your life.

We can, as you say, do it intermittently. You know, like the fast American diet, the five days of calorie restriction. I know, but I, I've spoken with their team, that they've tried to do a seven day calorie restriction.

And they found that people can't do seven days. Five days. They can do, when they, when they stay the sort of cancer population they do just three days.

And so, and I did a fast American diet, seven day restriction for, 18 months. And it is hard. Yeah. It is. It is hard. Five days was way easier. You also did, fasting with water and water only fast. No.

Do ten day water only fast. When I was really very young. Can't possibly do that now. And then I did five day, water fast. And that was very hard. The German calorie restriction, fast, making diet way easier.

But that is still a challenge. Yeah. Yeah. For sure. And also, you know, especially as people are getting older, sarcopenia is a is a big issue is a losing muscle mass.

And with intermittent fasting you can still work out right. And and be building muscle right. But also getting the benefits of the lowered insulin levels, lowered inflammation that comes and the autophagy that comes with the fasting and still get the calories.

You need to be building muscle during your eating window. And you're absolutely. And I, I stress that, you as you get older and, and I'm more sensitive that now that I'm over 65, that sarcopenia loss of muscle mass, has really negative health consequences.

So it's important to have sufficient protein. It's important if you're going to do these fasting explorations, that you do it in a way that does not, cause you to eat up muscle.

Yeah. Yeah. For sure. So, like the fasting mimicking diet or like a short term caloric restriction because you're getting the boost in human growth hormone, it will preserve lean body mass.

But once you start extending that and going longer on a caloric restricted diet, you don't get that. You actually get more cortisol actually gets starts getting released.

And, you start breaking down more muscles. So I think what you found from a compliance perspective is also actually most beneficial for the body based on a hormone perspective, because you have, more of the positive, I guess you could say anabolic hormones.

You know, there's a lot of anabolic hormones, some you don't want elevated and some that that can be beneficial, like human growth hormone. And then you get, you get a buffering or a stabilizing of the catabolic hormones there as well.

And that's really the key is getting that balance correct. And I like to talk to my, my tribe, that strength training. Very important even if you are wheelchair bound, walker bound, cane pound that, it's important to have a strength, exercise.

And you could ask for a physical therapy referral, occupational therapy referral to help you design, exercise programs. And this might be using resistance bands.

Fasting, muscle preservation, and hormetic stress

It might be using body weights, so that you can keep, sending the hormone signals to build more muscle. Yeah. Yeah. It's so key. I mean, we're going to talk a lot about diet, and you and I are huge advocates of of the right di and obviously you've done tons of research on it, but, you know, you can't out diet inactivity in a sense.

Right. You've got to get some activity and keep challenging those muscles. So really yeah, I think we can use food. You know, growing our muscles is part of doing traumatic stress.

Yeah. You know, in a nice way. I stress my muscles. So caused a little bit of micro damage. Immune cells come in and clean all that up. I can do that.

A similar concept with hermetic stress in food, using spices. I could do with intermittent fasting, with, time restricted for the fasting, making diet.

So, it's it's a similar concept, but mild traumatic stress to my system. And I can do that with food. That's right. That where medic stress means basically a stress that potentially makes you stronger.

Your body has to adapt to it, but it's a stress that your body adapts to. You become stronger and more resilient. Like exercise. You get these micro terrors.

And if you were to look at the inflammatory proteins right after exercise, you would think, oh my gosh, this person's inflamed. But it's a positive inflammation because the body will create new endogenous antioxidants.

So meaning that the cells themselves create antioxidants and create more resilience to protect themselves from that. And you adapt and become stronger.

So yeah. Well, yeah, we're medic. Stressors are just so key. And I think we forget that. So you have this traumatic stress with food and then there's the recovery phase.

Yeah. So I have reduced my, caloric intake. And then so I'm stressed that traumatic stress and then I've had sufficient protein and nutrients, for my body to do the rebuild and repair fats.

Yeah. So, so key. And I know, obviously, you're doing some great research on this. And let's talk about, like, most of the research in the natural health world.

Well, not natural health, just in the health medical world in general is drug studies. And of course there's also supplement studies. So how does lifestyle type studies differ from those.

So if we're doing the drugs that have got compound A, compound B, in neither the patient nor the, investigators, but people doing the stats know which is active compound or compound B in the that the beauty is everyone's excited to be getting the compound.

So you have all the benefits of a placebo. Now when I'm doing a lifestyle I will talk about diets so people know

they're assigned to the ketogenic diet.

They know they're on the paleo diet. They know their side. The usual diet with, additional educational resources. So I don't get the advantage of placebo because I know I'm in the intervention or I'm in the control.

And I'll tell you to a person, when people find out they're in the control arm, they cry because, you know, they so wanted to be in the intervention arm.

And we have to reassure them just how vital the control arm is and that we still are giving them, tips, a tip sheet every, month to help them know ways they can improve their diet model.

Although they're in the control, it is much harder. And then, furthermore, if I'm taking pills, it's a smaller ask to come in to the infusion or to take the white pill.

The the challenges. If I'm going to be in a diet study, I may have to learn new recipes. I may have to, have to adapt my current recipes, and swap out some of the ingredients for the no allowable ingredients.

I because it's a family intervention. I want my family to agree that at least in my presence, to eat what I'm eating. It's not eat the foods that I'm not supposed to eat.

So I'm not tempted to, make the, bad choices. It's a much, much bigger ask. Yeah, it makes sense. You lose the double blind element. And of course, we know the placebo effect plays such a big role.

But then there's. Yeah. And then there's the overall compliance aspect. Two of the people that are in the, you know, the study groups, the therapy groups, there's a compliance issue.

Have you guys run into challenges with that people following a modified paleo diet. So it's hard whether it's the, modified paleo diet. Yeah. Because now you've taken some familiar foods and said, nope, can't have them anymore.

And so we do a lot of work to help people find, what is the reason that they want to do this work? What are the things they would like to do if their health could moderately improve?

So we can keep them motivated, engaged because creating new habits is hard work. Yeah. For sure, for sure.

Lifestyle study design and compliance challenges

And you've got a new study that you're enrolling people in right now, kind of looking at the brochure right here at the University of Iowa. So effect of diet on quality of life and multiple sclerosis.

And so this is a new one. Let's let's go through the details on this one. So we're looking for people who are adults, between the ages of 18 and 17 with relapsing remitting multiple sclerosis who are willing to be randomized.

And the, three diets or one, the usual diet. That's the control that, two a time restricted olive oil ketogenic diet. So a 6 to 8 hour eating window and, there for a ketogenic diet, the fat that we're using to stress is olive oil, to make it more heart friendly.

And then, the, third diet is a modified paleo diet, which is similar, to the, level two was paleo diet. Right. So the, the olive oil ketogenic diet, they're going to be really you're going to be really strict on their amount of net carbohydrates that they get.

As with the modified paleo diet, they're going to be able to consume more fruit. So yeah, starches as the modified perda will probably be about 80g of carbohydrate.

Okay. But no know. No no grain, no legumes. You can have fruit. You could have, yams, squash in that. So, the

ketogenic diet is 35 to 50g of carbs. And we monitor blood ketones to see how people are doing with their, staying in ketosis.

Yeah. And we're encouraging, four tablespoons of olive oil every day. Yeah, I love that. I love that that idea. I mean, olive oil is one of the most polyphenol rich things you could put in your body.

Tons of aloe candles and hydroxy pterosaur, which, you know, the alio can't all they called nature's ibuprofen. And so this is fabulous stuff. Yeah, yeah, yeah.

And so you guys are emphasizing getting the healthy fats from the olive oil. So you're really focusing on kind of that Mediterranean approach, getting a lot of these mono and unsaturated fats.

Obviously a lot of people following ketogenic diet are getting a lot of their fats from saturated sources. Butter, butter, eggs, jags. Yeah. And we want them to use olive oil and we want the olive oil cold because when you, when, when you heat the olive oil, you damage the hydroxide, result in those polyphenols.

And so people will get a lot more health benefit from their olive oil if they'll have it cold. Yeah. For sure. Yeah, yeah. With olive oil you can cook with it, but you just don't get the polyphenols right.

All the polyphenols, you can't cook with it. But the part of the, the downside of cooking with the olive oil is you greatly reduce the health benefits.

Yeah. Exactly. Yeah. So if you do cook with it also take it raw. Right. That's that's the we take it raw you know. And people will will come to say they don't want to be on our diets because it's so high in saturated fat.

Well, we can do the ketogenic diet as a low saturated fat diet. We can do the modified keto diet as a low saturated fat diet. And when people come in with their, cholesterol, we'll tell them, okay, your cholesterol was high, so you're not going to be eating lots of bacon.

On the studied, you're going to be following the low saturated fat version of the diet. But we have there's some preliminary testing that goes in. We're looking at lipids, and you're looking at so we follow the lipids, and we, when they come back at three months, we get another lipid check.

You know, dietitians will give that person, follow up on, how their cholesterol story. And by the way, we also, if people have abnormal lab results, we send a copy of those results to, the, medical team as well.

And what else are you looking at? You're looking at lipids or what other. So, so in terms of clinical outcomes, we're looking at fatigue quality of life.

Yeah. And we'll look at anxiety, depression scales, mental clarity something called perceived deficits, scale. And those are all questionnaires right then in terms of quick work comfortable look at walking hand function.

Working memory. In vision function. And we are getting MRI's at baseline. And at 24 months now the MRI will not have, any contrast. So it's a more powerful magnet.

No contrast in that that will be super helpful in terms of the use though. Because people with mass as a group, our brains are shrinking more rapidly than the general public.

Yeah. And so can we, by improving the diet, get people back to a healthy rate of brain aging and everybody that's coming into this study is coming in with a a diagnosis of Ms..

Right. We had a confirmed diagnosis of Ms.. And if you're on a disease modifying treatment that's fine. We want you to stay stay on your disease modifying treatment.

If during the study period, your, medical team says, I want to change your medications for whatever reason, we

want you to follow the advice of your treating, medical team.

Current MS diet study details and enrollment

Yeah, yeah. Great. And people can find out more about this study. Let's see. The site is terrible. So just Terry t e r r y wahls.com? That's your website.

And then if you go right to the Terry Wahls forward slash Ms. study. Right. That will take you right to the actual study page. And guys if you're if you're out there with M. S.

or you know anybody out there with Ms.. I mean, Doctor Terry is doing some amazing, groundbreaking research, I mean, changing lives. And, you definitely want to be a part of this, and, and, you know, use your diagnosis to help further the research.

And, and obviously, this will also help motivate you and inspire you to following a plan like Doctor Terry did, that, can dramatically help improve your quality of life.

And if you happen to have progressive MS.. Or another, form of MS.. Please go scream and, be part of our patient registry because that will allow you, to get notified when we do our survey only based studies.

Yeah. That's good, that's good. Now, doctor Terry, let's transition to what your lifestyle looks like right now. Obviously, you just keep learning and keep adapting.

And so what I'm doing right now, so I get up the morning, I do my morning meditation. I'll do a workout. So three days a week at strength training today, was aerobics.

So I did, Nordic walking, which is, lots of fun. Then I came back in and launched into my day. Now I am doing, one meal a day. So, a lot of, two hour eating window, and it's much more of a ketogenic diet.

It's a nice, nice Mediterranean style. So lots of lifestyle, right? Eat your meal in, like, two hour, two hour time span. Take your time. Right. And it is, lots of olive oil.

So it's more of an olive oil ketogenic diet. And, you know, you know, I like to experiment, so I'll do that for a while. Then I'll probably go back to more of a pill effect, diets or a little higher carbs. And, I, I probably I'm never going to go back to a diet that has more than 50g of carbs.

So, you know, probably what's going to happen is I'll go between 35 and 50g. Now, for comparison, the usual American diet has about 300g of carbs, right?

Right. Yeah. Anything under, I think 200g considered low carb. But if you really want to get into kind of a therapeutic low carb perspective, you definitely want to be really under 100 or 150, depending on your activity level.

And then if you want to get into ketosis, particularly depending on your, your activity level and the way your body processes carbs, you're, you're dropping them down under, under 50g or so and you're talking about net carbs there, right?

Not not including fiber. Yeah. Yeah. That's what I figure. And you know, the tighter your eating window for for most people, what they notice is that they have a little bit more tolerance with the carbohydrates because their body has broken down the stored glycogen, in their liver, in their muscles.

And also if they're active like you are. So therefore when you consume the carbohydrates, you're eating a sweet potato or fruit or whatever it is now, your muscles, your liver are going to grab that glucose, fill up their glycogen stores.

And you don't need insulin, right. In a sense, your your glute for transporter protein is active and pulls it right out,

almost like an insulin like effect.

Keeps your insulin, your fasting insulin down, which is so important because insulin we know is a fat storage pro-inflammatory hormone when it's elevated.

So, we get great effects checked by fast insulin under three. So. Yeah. Exactly. I'm pretty good about all that. That's right. That's like the super sweet spot right there.

Right around that 1 to 3 range. You want to know you're producing it still right. But but keeping it down under six right. So that's what I always look for.

So it sounds like you're doing great with that perspective and you're not noticing. You're how do you feel? Like obviously you're doing a 22 hour fast most days.

Yeah. Most people listening to this would probably a lot of my listeners do something similar. But, I would say probably 80 to 90% of the listeners here are like, how does she pull that off with exercise?

How do you feel throughout the day? I feel great, you know, and, strength training, I feel I feel great, you know, for years I just did running. I did some hits.

Now I'm a much more focused on strength training with, free weights, and a, vibration plate three days a week.

Terry Wahlsu2019 current routine and fasting approach

And then for my aerobic exercise, I will bike, I'll do Nordic walking. I will jog a story when I'm jogging now. Not fast, not real long, but. Oh, my gosh, what do you think?

I mean, yeah, 2007. I could not set up that, No. I'm jogging. That was going to be my follow up question. I was going to say if 20 years ago somebody came to you, if I came to you, and I said, hey, in 20 years you're going to be jogging, lifting weights, right?

Biking. You're going to be doing this every day. What would your response been? Well, I was just into my wheelchair, just into realizing, just how grim my future was.

It's hard to believe. It just would not have, comprehend comprehended just how great my life was going to turn out. It, you know, I also have, tried general neuralgia as another part of my disease complex.

So I've had 27 years of progressively worsening pain network. My father had 20 years of progressively worsening pain. And so, you know, in 2007, I really had a terribly grim future.

Bedridden, probably by my disease. Demented, probably by my disease, and dined with intractable, horrific levels of pain. You know, of course, as you all know, that's not how everything turned out.

And so whatever your circumstances are, however difficult your medical diagnoses, even if your physicians have said there's nothing more that they can do, which is what they were telling me, that you we don't that we can, we're just trying to slow things down.

We turn things around dramatically every week. I'm hearing from my tribe that they have found a, my work implemented it, and they're getting better for the first time.

But I have to go and look up these diagnoses. They're they're genetic diagnoses. They're these obscure metabolic diagnoses. There is stuff that you can do in fasting.

Yeah. As part of that is an incredibly powerful technique that can improve how your cells function. Yeah. So powerful I always say fasting is the most ancient, inexpensive and powerful healing strategy known to mankind.

Doesn't cost us anything. Our ancestors all did it. They didn't have refrigerators and pantries. And like with your case, you know, it's extraordinarily powerful.

And, you know, you and I both seen that with people all around the world with really every single condition out there. So there's a lot of hope. And Doctor Terry, you know, you're, you know, a lot older than you were in 2007 and yet significantly better in significantly better health, right.

Night and day difference. And so no matter where you're at, yeah, there is online calculators that can calculate your biologic age based on how many sit ups you can do, push ups, your blood pressure, weight, lipid values, etc..

So I've, I've completed that based on my answers. When I was 52, my biologic age was 68. I completed, a couple of years ago when my chronological age was 65.

And my biologic age was 45. Yeah. And I have done my telomeres and I want everyone. So it's a measure of aging. And what I want people to know is that when I did it, I was mentally bracing myself because, you know, Ms.

is the disease of accelerated aging. Like, okay, sir, if you're older then you're CoreLogic age. Don't be upset. You know, just check it again in a couple of years.

Hope, aging, and closing advice

And I was 15 years younger than my chronological age, so I didn't bother recheck you, like. Okay. Right. That confirms that everything that we are doing, everything that David's teaching you, everything that I'm teaching you can slow the aging process back to the way it should be.

If we take good care of ourselves, we age very, very slowly. And everything should work really well into your 80s, 90s at 100? Yep, absolutely. And where do you see yourself going over the next ten, 15 years, 20 years of your life?

You're just excited about doing this research. What, what other things are you excited about? You know, Linus Pauling was still, having postdocs, doing research, giving lectures to State Room only folks in his 90s.

Yeah, that's my plan as well, to keep doing my research, keep having postdocs. Now, I will have the opportunity, hopefully here to be a grandmother soon.

And so it may be. I just want to say I will want to have grandmother time. Yeah, of course, of course I'd love to do the world. Yeah. You know, I I'm just so grateful to have my life back.

And I want everyone to know that you too can have your life back. I love that, guys. Check out doctor Terry Walls Terry walls.com is a website again. Check out the study as well Terry walls.com/rms study.

And also you can go to Amazon and get her book The Walls Protocol. If you or anybody you know is dealing with an auto immune condition, that is the book to get the walls protocol.

Check that out. Doctor Terry, thanks again so much for your time and your inspiring message and your inspiring work. Really appreciate you. Any last words for our audience here?

Go out, get some fresh air, eat, eat, play protein, a little bit of vegetables and lots of all.