

# Multiple sclerosis and anxiety: The Wahls Protocol

- A move to diet and lifestyle research
- Recovery from MS with functional medicine and the Wahls Paleo™ diet
- MS and anxiety: myelin damage, medications, GABA and glutathione
- The Wahls Paleo™ diet
- Organ meats and a ketogenic diet



*Trudy Scott:* Welcome to Season Four of *The Anxiety Summit*. I am your host, Trudy Scott, food mood expert, certified nutritionist, and author of *The Antianxiety Food Solution*. And today our topic “Multiple Sclerosis and Anxiety: The Wahls Protocol.” And today we have Dr. Terry Wahls here to talk all about this. Welcome Dr. Wahls.

*Terry Wahls:* Hey, thank you so much for having me.

*Trudy Scott:* I’m just so pleased to have you here. I’ve actually had the pleasure of meeting in person and it’s wonderful to have you participate in the summit this year. I think it’s something that not a lot of people are talking about and I’m just so excited to have you share your brilliant expertise on this topic.

*Terry Wahls:* Oh thank you. You’re doing such excellent work. I’m very glad to help support spreading this message.

*Trudy Scott:* Great. Let me read your bio and then we'll talk a little bit about some of the topics and some other interesting information that we were talking about before we got on this call. But for people who don't know Dr. Terry Wahls is a clinical professor of medicine at the University of Iowa where she teaches internal medicine residents, sees patients in a traumatic brain injury clinic and conducts clinical trials. She is also a patient with a chronic progressive neurological disorder, secondary progressive multiple sclerosis which confined her to a tilt recline wheelchair for four years. But thanks to the power of the Wahls protocol which we're going to talk about today which is based on functional medicine and the Wahls paleo diet Dr. Wahls restored her health and now pedals her bike five miles to work each day. How wonderful is that. She's the author of *The Wahls Protocol: How I Beat Progressive MS Using Paleo Principles and Functional Medicine*, *Minding My Mitochondria*, *How I overcame secondary progressive multiple sclerosis and got out of my wheelchair* and teaches the public and medical community about the healing power of intensive nutrition. Your story is just amazing and we're going to have you share more about that because I think it's important that people can see the power of intensive nutrition. And I want to also just share that you've got a wonderful Tedx video *Minding Your Mitochondria* and we'll make sure to share a link for that so folks can watch that. And you have a cookbook that's coming out next year. Is that correct?

*Terry Wahls:* Oh yes. I'm so excited. Right now it's called *The Wahls Protocol Cooking for Life* book but of course the publisher may tweak that a little bit. And it's been lots of fun developing the recipes, testing them with a special attention for practicality because my followers are working, they're tired. We want to have things that we can easily prepare and still let them have maximal nutrition.

*Trudy Scott:* Wonderful. We like easy.

*Terry Wahls:* We like easy. And we like great nutrition.

*Trudy Scott:* Excellent. Now it's so interesting that you are involved in research as well and you were mentioning that you are looking at doing some new research. Tell us a little bit about that.

*Terry Wahls:* It is just so, so exciting. So we have our original study. We have the 20 folks who went through. Those papers are under review for the Gate paper, that's under review. We have another paper we're putting together with analyzing the mood and cognition data. Very exciting stuff there. And we are writing up the findings from the MRI data. Also very fun, exciting stuff to report. And we are now collecting data on the comparison of a Swank diet which is a low saturated fat diet and

the Wahls diet which is lots of vegetables, sufficient meat, a higher fat diet for treating MS related fatigue. That's very exciting.

And I'm working with my team on a new protocol that we'll be submitting that will compare – it will be a cross sectional study that will look at the relationship between diet quality, activity level, sleep quality, stress reducing practices and brain structure and cognitive abilities. So we are very excited about this proposal and we're developing that. We'll be sending it off to a variety of funding sources and ever the optimist I'm hoping that by this time next year we'll have that hopefully awarded and that work under way.

And I'm very blessed as well Trudy that we have a number of very generous anonymous donors who have given us some substantial support to the lab as well. So I'm just extraordinarily blessed.

*Trudy Scott:* You are busy and this is very exciting. I look forward to seeing the outcomes of these studies and we appreciate you doing this research because it's one thing doing the day to day practice but having the research to support this I think is really important if this is going to be taken seriously. So I just want to give a shout out to you and all the other researchers. I think the research is so, so important and I'm a total research geek. I love to see the research so I appreciate you even more.

*Terry Wahls:* This is such a wonderful era to be doing the research because of the internet, because of people like you and Rob Wolf and Jimmy Moore reading the research and putting it out there so people in the public can read what we're doing in our labs and make real time decisions. Like okay, that sounds reasonable. I'm going to self-experiment and try these concepts for myself. So the public is leaning about the research right along with the research community and getting to make informed decisions. So I think this is a very, very exciting time to be practicing medicine and to be doing research and to see the speed of change.

*Trudy Scott:* Yes. And unfortunately we know often with research it takes a long time for some of the research to trickle down into practice. And I think that is changing now with online summits like this there's much more awareness with live events. I know you've got a live event coming up and we're going to talk about that. And then with the functional medicine that is changing things. So we are at a very exciting time and it's great. It's very, very exciting.

*Terry Wahls:* And the public is pushing the clinical community to embrace these ideas much more rapidly. Universities like Iowa they're talking about establishing a functional medicine center and so this will take them

some time. I'm helping them develop a business plan and modeling. And so I predict in the next 18 months more and more universities will be realizing and be like oh my god, we have to be establishing these centers. So this is happening because of public demand. And the funding agencies who never wanted to do diet and lifestyle research because it's messy. It's far easier to do lab and mouse studies and supplement and drug studies their funders and donors are saying we want diet and lifestyle studies. And so I'm seeing agencies like the MS Society reordering their review process and putting out calls for diet and lifestyle research. And this is all being driven by the public and the donors. And I love it.

*Trudy Scott:* That is great. That's how it should be. We saying what we want and the public is saying what they want and it's driving it. And that's how it should be.

*Terry Wahls:* That's right. And it was all made possible because of Al Gore and the internet and social media like Facebook and Twitter that gives rise to these voices which then the funding agencies can track and feel like oh my gosh. Our constituents are demanding this.

*Trudy Scott:* Right. I love it. Well we weren't going to talk about this but I'm glad we went down this little path because I think it's very, very applicable and just very exciting. So thank you for sharing.

*Terry Wahls:* And you're part of it. The work you are doing is absolutely part of this Trudy. So thank you so very much.

*Trudy Scott:* Well thank you. We all have a part to play and we're all trying to get the message out. And I love that we have this opportunity with doing online events and with the internet and social media to reach more people. It really is amazing and the fact that they're asking for this is just – we're heading in the right direction. It makes me feel very hopeful which is great.

I don't want to forget this. I would like you to just tell us a little bit about another thing that you're doing which is your event. You have this annual event and you have an event for the public and then you also are doing practitioner training which is wonderful because it allows practitioners to then take the Wahls Protocol to their community. So tell us a little bit about your two events.

*Terry Wahls:* So every year now because my clinical time is strictly for the VA and I do clinical research at the U so I do clinics for veterans. For the public I do one event every year which is the Wahls Protocol Seminar which we've grown now to three full days. It's an intensive immersion to

here's what we're doing, the science behind it, what I've learned since I've written the book. And I give people a chance to practice some of these skills. We really dive deep into the internal motivation, practicing skills and how you're going to implement the protocol, work with your primary care doc, et cetera, how to sort out when you need a functional medicine doc. So very practical.

I also have for years now been called from people all around the globe trying to see me and I have to tell them that they can't. And I've had enough requests from practitioners wanting to get trained so we've added a practitioner training and certification program for people who are nutrition professionals, health coaches, primary care docs, nurse practitioners, PAs, chiropractors, naturopaths or other health professionals who are licensed to think if they would also fit they can contact us and we'll try and work that out. So they come to the seminar and then come to a fourth day that is focused strictly on the practitioner aspects ranging from the coaching, primary care provider, using electrical therapy, et cetera. And then we'll have a certification exam and list people on my website with their credentials in the location and contact info. And I'm so excited to finally be able to tell people who are reaching out to me that here are some practitioners with some expertise in training in using the concepts that I teach.

*Trudy Scott:* Wonderful.

*Terry Wahls:* And this is August 4 through 7. People can go to my website TerryWahls.com and then go to the shop page. And on the shop page there's a little tab for courses and programs. I believe we have this listed under the courses page.

*Trudy Scott:* Great. And I'll make sure to include a link to this on the website and the speaker blog that goes with that interview so folks can find those together with your books and everything else. And so people can check it out which I think is really great that you're doing this. And this way we'll get the message out even further.

We talked a little bit in your bio about how you were in a wheelchair and now you're riding your bike to work which I think is wonderful. Tell us a little bit about your story with MS so folks have a better picture of what you went through.

*Terry Wahls:* Sure. You know I was diagnosed in 2000 at the age of 45 just as I came to the University of Iowa and Iowa City VA. And I went and got a second opinion at the Cleveland Clinic which is an internationally recognized center and they said yes, you have MS. I saw their best people, took the newest drugs and still within three years my disease

had progressed to secondary progressive MS. And at that point I needed a tilt/recline wheelchair. I took chemotherapy. I continued to decline. Then we tried that new TNF alpha blocker Tysabri which is \$50,000 a year. I continued to decline and then was switched to Cellcept.

And as I was declining I knew that conventional medicine was not stopping the decline. I was likely going to become bedridden and demented. At that point I decided that I might as well go back to reading the basic science literature myself and would begin experimenting. And I started with vitamins and supplements which did seem to slow my decline. I'll back up for a moment. My Cleveland Clinic doctors in 2002 when I was still walking around had suggested the work of Loren Cordain which I read about the paleo diet, the leaky gut, molecular mimicry and the reasons to avoid grains and lectins. I decided the science was reasonable so after 20 years of being vegetarian I gave up all grain, all legumes, all dairy and went back to eating meat, a big deal.

But I continued to decline. The next year I needed the wheelchair. And then I would start reading the science and started adding vitamins and supplements. I continued to decline slowly. In the summer of 2007 I was so weak I could not sit up in a regular chair. I had to recline in a zero gravity chair so my knees were higher than my nose. I could walk short distances like 20 meters with two walking sticks. Otherwise I needed that tilt/recline wheelchair. I could drive to work and back, that was it. I was just beginning to have some brain fog. My boss – the VA had been very kind, redesigned my job multiple times to keep me working. This time he said he was going to in January have me start seeing patients in the traumatic brain injury clinic without residents. And so my wife and I knew that this was the VA's way of saying look, we're done redesigning your job. You're going to have to take medical disability. So I was depressed but I was like okay. This is what I'm going to do. Either I can do this job or not.

But of course as it would turn out I would discover functional medicine. I would discover electrical stimulation of muscles at the same time that summer and would begin that during the summer. I would redesign my paleo diet to maximize the nutrients and the things I was learning about in functional medicine. And so in January when I started in the traumatic brain injury clinic I could do it. And by March I'm walking around without a cane doing well. At nine months I get on my bike and I ride about a block for the first time in probably six years. And at 12 months I'm able to do a 20 mile bike ride.

*Trudy Scott:* Wow.

*Terry Wahls:* So this just like completely transforms how I think about disease and health, how I practice medicine. It transforms the research that I do and ultimately it would lead to the TED talk that's had over two million views to the book deal that's had hundreds of thousands of books sold and to redoing my research program into this diet and lifestyle program. We're getting papers out. And of course the first round of papers from this radical idea people all thought we were just like completely crazy. We're still having some challenge getting our papers out because it is such a radically new way of addressing MS. But our papers are getting out. And here at the university because the university has seen these stunning videos of people before and after the intervention. You don't have to be a scientist to see this dramatic change. It's jaw dropping.

I'm very excited that our Gate papers are under review because once I can get those published then the public will be able to see these videos. And that is just going to be such an exciting moment when the Gate paper finally gets accepted. So it's a very long dance you have to go through – revision, revision, revision to get everything perfect so it will finally be accepted but it will be. And when that happens I'll let you know so we can let the public come see these stunning videos.

*Trudy Scott:* Wow. What an amazing journey. And kudos to you for looking elsewhere and digging and finding the research and changing your diet and changing it again and finding functional medicine. And what an amazing journey and how amazing that you now get to help thousands and thousands of other people. This is just so incredible.

*Terry Wahls:* And it all needs to happen this way Trudy. I had to get that disabled. I had to be on the verge of utter catastrophe to begin to feel the effects of cognitive decline to do all this work and then feel the effects of all this healing that happens when you provide a healthy habitat for the human ecosystem and all this repair happens. If this hadn't have happened I'd still be a conventional medicine doc thinking the latest drugs out of the New England Journal of Medicine were the way to go as opposed to seeing the gospel of food and sleep and movement and stress reduction.

So my kids still sort of wish I'd never gotten MS and that I was still as vigorous of an athlete as I once was. But Jackie and I are like, you know, it all had to happen this way. And the gifts that I've received from it happening this way are really quite profound.

*Trudy Scott:* Wow, that's amazing. I've just got goosebumps listening to that. And that's beautiful and you have to think of it as a gift now. At the time it didn't feel like it but it is a gift because look where you're going and

look what you're doing. It's just incredible. So for folks who don't know what functional medicine is can you quickly describe that?

*Terry Wahls:* Sure. Functional medicine's been around probably about 30 years. Jeff Bland and David Jones and Sidney Baker were some of the original patriarchs that got this going. The intent was to use the latest basic science to help physicians, health care practitioners take care of complicated complex diseases. We wanted to look at what were the environmental factors that contribute to poor health. And they would evolve and create a way of analyzing the environmental factors, how they impacted, how the human organs work, the digestive and detox and hormonal systems and what we could do to support all of those organ systems to work more effectively. And by doing that improve health and reduce symptoms. It's a little bit more complicated than that but it's all about creating an increasingly more favorable human habitat for the person.

*Trudy Scott:* Excellent. And getting to the root cause of the problem and addressing that rather than medicating.

*Terry Wahls:* The drugs treat a symptom very effectively and it's been proven with a randomized double blind control trial. But since most of the chronic diseases we have are result of an interaction between the genes that we have and a lifetime of poor diet and environmental exposures. If we don't address those diet and environmental exposures the underlying disease process will continue and the person is going to have worsening disease needing higher drugs, new drugs, develop new diagnoses and new disabilities.

Whatever strategies we use we must get to the root cause which is the diet and lifestyle factors that are interacting with your genes leading to the broken physiology, the broken chemistry in all the disease processes. So I teach the students that the original diagnosing we get in medical school but then we have to diagnose what's wrong with the human habitat, the ecosystem and help the person fix their ecosystem. Functional medicine is a terrific way to think about all of that.

*Trudy Scott:* Perfect. And well said. We're going to go into the Wahls Protocol and I'd like you to share what that entails. But before we go there can you talk a little bit about anxiety and MS. And I know you talk about the myelin and the nerve cells and how to fix neurotransmitter production and how commonly do you see anxiety and depression in the MS community.

*Terry Wahls:* We measure anxiety and depression with two common scales in our group of patients that we follow. Both symptoms are very common.

They're very common in traumatic brain injury, another group that I have a large practice with as well. And this is probably related to myelin damage in the front part of the brain, the prefrontal cortex. It's often related to poor nutritional status, inadequate intake of omega-3 fats, in inadequate intake of B vitamins and some of the support that we have for how we methylate the neurotransmitters and do some methylation around our DNA. So it's certainly very, very nutritionally related. It's very much related to myelin damage.

The medications that people use to treat anxiety have a lot of risk for addiction potential. And it also the medications for depression are really not that effective but the literature would say dietary approaches, stress reduction and exercise can perform as well or superior to all the medication trials as well. And it certainly seems to be what our clinical experience both in traumatic brain injury and in the MS world would say.

*Trudy Scott:* Okay. So when you're talking about addiction potential, you are referring to the benzodiazepines which are commonly prescribed for anxiety?

*Terry Wahls:* It's very, very strong for addiction potential. And then once you're on them getting off them is a very complicated process because if you suddenly stop you can have withdrawal problems that can become life threatening. So one has to be very gradual, very slow in the reduction phase. It's certainly very important, very worth doing. The best bet is to never get on that stuff and to use dietary and lifestyle environmental approaches first.

*Trudy Scott:* Great. And I wholeheartedly agree with you. I'm very, very vocal about the benzodiazepines and using these other approaches so you don't have to get onto them. They're meant to be prescribed short term two weeks and people are on them 20, 30, 40 years and then it just becomes a nightmare.

*Terry Wahls:* It just becomes a nightmare. Absolutely. There's an awesome book *The Making of an Epidemic* that examines the use of psychiatric medication for many of our chronic mental health issues. Certainly a read I recommend to anybody who has a family member with a mental health challenge. *The Making of an Epidemic*.

*Trudy Scott:* *The Making of an Epidemic*. I'll make sure that we share a link to that. That sounds great. And we're now seeing the SSRIs are not that effective and we've got all the side effects. And certainly with kids we've got issues of aggression and suicidality. And if we can use these other diet, exercise and lifestyle approaches that's obviously the way

that we want to go. Now in my practice when I'm working with people with anxiety and depression I use GABA for low GABA levels which is a sort of physical anxiety. And I know you've written about GABA or boosting GABA levels when it comes to some of the things we see especially with MS.

*Terry Wahls:* So GABA is a very important neurotransmitter. It can really help mitigate the bad effects of having too much glutamate. You can help your body make more GABA by improving your glutathione stores. So the question is how do we improve our glutathione stores? It turns out the vegetables in the cabbage family and in the onion or garlic family will stimulate the production of the enzymes that increase glutathione. So that's one of the reasons why I said have three cups of sulfur rich vegetables from the cabbage family and onion family vegetables because I want to stimulate that glutathione. The sulfur in the vegetables will help provide some of the building blocks. If you have things like acetylcysteine or taurine these are sulfur containing amino acids that can also help with the production of GABA.

There's some literature that you can take GABA directly. And there is a lot of debate that GABA is broken down in the gut and you break it down into the constituent parts which are then reabsorbed and rebuilt. I'm not sure where the literature has finally weighed in on that. Certainly taking GABA can be very helpful for anxiety. Taking the cabbage and onion family vegetables can be very helpful at boosting intracellular glutathione which is necessary for the production of GABA. So I think all of those strategies are very, very reasonable for anyone who's trying to boost their GABA levels and/or suppress their glutamate levels.

*Trudy Scott:* Wonderful. And I love that you're talking about the foods. How wonderful to be able to do it with those foods and you're getting all those other benefits as well, anti-cancer benefits and detox benefits and everything. And of course the glutathione is so important for detox. So I love it. Beautiful.

*Terry Wahls:* I have a little comment about supplement use. I don't think there's enough conversation going on about supplements. Supplements I think used to be much more consistently produced here in the United States. But because of changing world economics I see that more and more of the supplement raw materials are being manufactured in China. And for a lot of these these are being manufactured by genetically engineered bacteria so they can be made biologically or sometimes they're made chemically which I'm not so sure that's a great process either. So my comfort level with knowing where the supplement is being manufactured, what are the quality standards, is it a genetically

modified organism that's being used? It is being chemically used? That makes my comfort level with supplements diminish, decline over time.

And my preference for teaching people how to get more of everything that they need through food with less reliance on these supplements because I don't know where they're coming from. I don't know – it's really hard to know precisely where the source products are coming from.

*Trudy Scott:* I use supplements a lot in my practice and I think the important thing is if you are going to be using supplements know where they're coming from, go to a reputable company. But I wholeheartedly support that we need to go back to food. We need to go back to the basics. It's really important that we don't rely on supplements firstly. And then secondly if we do find that we need to therapeutic levels or small maintenance levels we need to be getting good quality just like we're focusing on good quality food. We need to be focusing on good quality supplements.

Going back to your comment about GABA. I use it a lot in my practice and I'll be doing a whole talk during the summit on GABA and all the latest research and theories on the mechanisms as to how it works because people are saying it doesn't cross the blood brain barrier but if it's getting into the brain through the leaky brain or is it just in the gut. So it does work and we just need to make sure that it's good quality obviously. And then if someone needs it that's wonderful. And then of course all these other methods that you were talking about and that you're going to share. We'll talk more about the Wahls diet now. I think it's all great.

*Terry Wahls:* I see so many people just going to the local pharmacy, getting supplements very inexpensively or going online very inexpensive. Oh my goodness. They have no idea where that is coming from. So I really want people to be very, very thoughtful and to work with people like yourself that are much more careful to scrutinize all of these questions.

*Trudy Scott:* And what concerns me is when I hear people say on Facebook I went and bought so and so product because it was so much cheaper. And maybe it's cheaper because the quality's not so good. So don't look at price. We need to be – whenever we're putting anything in our body it needs to be good quality whether it's food or supplements. I'm glad you brought that up.

So I want to go into the Wahls protocol the diet and some of the other approaches that you use. But just because I like to mention the research in these interview, I just wanted to mention two papers that were published this year covering the incidence anxiety in MS. And this is a paper in the Journal of Child Neurology. They looked at 140 children ages five to 18 years and 33.1 percent had attention problems and anxiety. So very commonly found in kids. And then another one was also published in January of this year, five years after clinical diagnosis. Of the 236 cases, 40 percent had clinical anxiety and 16 percent had clinical depression. And then 41 percent had clinical fatigue. So it is common. I just wanted to share those. I like to share the research in the blog that goes with this interview so I'll share those.

And then I've got a question for you around this Dr. Wahls. This could be a combination of anxiety and depression because they have this condition. But it could also be related to some of the underlying reasons why they have this condition in the first place. It's sort of a combination of both is it?

*Terry Wahls:* I think probably. You know my thinking about disease processes of course has really changed. I think more about what's the root cause, what were all the factors that contribute to the disease state. And with that probably damage the myelin, the connections in the prefrontal part of the brain leading to the anxiety, leading to the depression. There's more evidence that it's central damage in the brain that leads to the fatigue. In addition they often give disease modifying drugs that can worsen depression for reasons that are not fully understood. But we think it's tied to the interferon cytokine levels that are manipulated with some of these disease modifying drugs.

And one can wonder about these children who are being placed on these very potent immune suppressing drugs at a very young age when the immune system is a vital part of maintaining health and vitality. What consequences for the life of these kids. It's a very big deal.

*Trudy Scott:* And instead we could have them make some of these dietary changes and look at the environmental factors. So tell us about the Wahls diet.

*Terry Wahls:* I based it on a paleo diet although I have created a process for vegetarians and vegans so they certainly can do it. My focus is ramping up the vegetables and the target is nine cups because I'm a tall lady, six foot tall. And if you're a petite female or a very petite man it might be six cups. It should be equally divided between dark green leafy vegetables like spinach, kale. Sulfur containing vegetables, in particular the cabbage, onion and mushroom families because of the medicinal qualities of those three food groups. And then deeply

pigmented stuff – carrots, beets, peppers, berries. And I'm really looking for all the colors, particularly blue, black, purple. Six to 12 ounces of meat.

And then as people go further in level two we start talking about the benefits of organ meat, fermented foods, sprouted nuts and seeds and seaweed. And then at level three I talk about the benefits of doing a ketogenic diet or if you can't do ketogenic going to a more low glycemic index diet. And I'm probably the only MD, diet author that has said okay, and it was designed specifically for brain cells and mitochondria. We identified 36 nutrients that are really important to brain cells and mitochondria. I made a menu and recipes and then analyzed it using the same kind of research literature tools that I use in our research study to verify that we feed everything you need at all three levels and tweak the rules until we got it so we could consistently provide that key nutrition.

So it's designed for your brain. It does a good job. We've tested it. And we have recipes that make it pretty easy to do and we think quite tasty. And so far it's certainly transformed the lives of millions of people.

*Trudy Scott:* Wonderful. So a few follow on questions. Did you mention fats in there? Healthy fats?

*Terry Wahls:* Oh yeah. So I talk a lot about fat in the ketogenic chapter but fat really is critical because your brain, my brain, it's 60 to 70 percent fat. A lot of people know that we need omega-3 fats but we also need omega-6 fats. So we need arachidonic acid, linolenic acid, docosahexaenoic acid, eicosapentaenoic acid. All of those belong in our cell membranes including cholesterol and saturated fat. So fat is a vital nutrient. Trans fats from vegetable seed oils that are used for frying food which makes trans fats are very inflammatory, very damaging to our cell membranes and increase the damage to the brain, to the blood vessels, increase the risk of mental health problems, autoimmune problems, cancers, dementia. It's sort of like if you want to wreck your health and you need to speed it up, the wrecking of your health, eat more fast food that's been deep fat fried. If you want to restore your health eat grass fed meats, wild game, avocados, put a handful of nuts or seeds in your smoothies. All organic preferably. And you'll have the building blocks to heal your cell membranes, repair your brain. If you want to be demented in a hurry eat a lot of fast food that's been fried in a deep fat fryer.

*Trudy Scott:* I like that. That's a quotable quote.

- Terry Wahls:* Yes so if you think you're grandchildren are going to be too smart for their britches feed them fast food with foods that have been fried in vegetable oil.
- Trudy Scott:* What a terrible thought. I want to just ask a few follow on questions for the diet. Now someone's going to hear nine cups of vegetables or even six cups of vegetables. Give us a few tips on how you would consume that much vegetables.
- Terry Wahls:* What our study subjects do and I like to do is I start my day with a smoothie. The garden's coming in so I go out with a big bowl and I cut fresh garden herbs. So I've got two to three cups of garden herbs that I put in my smoothie in the morning. And I have two to three cups of garden herbs into my evening smoothie. So that gives me four to six cups of herbs that I have every day.
- Trudy Scott:* Can you give us an example of some of those herbs?
- Terry Wahls:* For example oregano, tarragon, lemon balm, savory. I'll be putting basil in when that comes a little bit further along. Chicory, chives, parsley, cilantro, lavage. I have all that stuff growing so I rotate through various parts of our herb garden. And if I seem to be getting short on herbs then I'll just put in kale and Swiss chard. So I'll have two to three cups in my morning smoothie and two to three cups in the evening smoothie. I may have a salad and with greens. And then we'll have some cooked beets. I may throw berries in with my smoothie. And I may have – we'll always have some mushrooms, onions or a root vegetable as well. And I'll have some meat. So today we had chicken. We have homemade brats from our local organic store that has no additives which is very handy. There's no nitrates in it. They're very handy. And we'll do lamb burgers and I like to mix lamb again with a lot of savory, rosemary and oregano fresh from my garden that I pulse in the food processor. So I'll pulse probably four cups of herbs and then I'll add two pounds of ground lamb and mix the herbs all in and make lovely little patties and grill those.
- Trudy Scott:* I'm salivating here. This is lovely, beautiful. And then a few more questions around the diet. You mentioned organ meats. Tell us why organ meats would be beneficial to add in?
- Terry Wahls:* So our ancestors would have had probably a third of all of their meat consumed as organ meats. And certainly if you go back millions of years our ancestors survived because they were scavenging from the carcasses from larger predators and were using tools to break open the long bones and the brain to get the DHA. In the organ meats is a great source of vitamin A and many of us we don't realize that the plant

source is not vitamin A. You have to convert to the actual vitamin A. So you're converting beta carotene into retinol. And there's a huge genetic variability in how well we can do that. If you have a chronic health problem you're likely one of those poor schmucks who can't convert vitamin A very effectively and you need to be eating it. And the best way to eat it is to eat liver or heart or organ meats. But liver is a very good source. And so is cod liver oil. Liver is a great source of coenzyme Q and all the fats soluble vitamins, all the water soluble vitamins. It has all of the essential fatty acids.

Now because it has so much vitamin A I would not have it more than two or three times a week. But having it two to three times a week that would certainly be fine. Heart is a great source of coenzyme Q and minerals and B vitamins. So organ meats, fabulous nutrition. Fabulously good for us. And because most people don't realize that they're a super food they're probably the best nutrition for the money you spend because you can get organic heart, organic liver very inexpensively.

*Trudy Scott:* Excellent. And it's such a strange thing because so many of us ate organ meats when we were growing up and no longer eat them now. And adding it back is beneficial for your immunity and it's so beneficial for mood health and just overall health in general. So all of these principles that you're talking about here as well as helping if you have MS – it is very beneficial for providing those raw materials to make those neurotransmitters. So you are more able to make GABA and more able to make serotonin and dopamine and all the other neurotransmitters that are going to help you to feel good. So I love it.

*Terry Wahls:* That is so important. So important in organ meats. And people are quite surprised that they can often receive the health boost really quickly after adding that back.

*Trudy Scott:* I find my clients are a little bit skittish about adding in organ meats but you can go slowly. As I say make a liver pate to start with and coming from South Africa we used to eat chicken livers as a starter at restaurants. It's a standard starter at restaurants. And just making some spicy chicken livers is a way to go just to start getting used to it. And then when you start seeing those benefits you can start experimenting a little bit more. Have you got any tips that you'd like to share when it comes to organ meat?

*Terry Wahls:* I'd love to. So if you overcook the organ meat and you make it well done it'll be tough, leathery and awful. So my advice is first to cut up two onions, sauté them, caramelize them as much as you like. Take them out of the pan. Put in your chicken livers, cook them gently.

Leave them medium rare. And then you could try a half pound of chicken liver with your two large onions and if that feels like you need to be very slow, put all of that in your food processor with some olive oil and make it into a liver pate and serve it with either raw vegetable crudites or a gluten free cracker. It'll be very, very lovely. The other thing you can add to make that pate a little bit tastier is a handful of raw almonds or raw sunflower seeds, again to mellow out the flavor just a bit.

As you get more comfortable you can work up to two onions and a pound of chicken livers. And when you get really brave you can take a chicken liver, wrap it with bacon and grill it or broil it in the oven until the bacon is as done as you would like and you'll probably find that – my daughter calls that delicious yummys. I serve those as hors d'oeuvres when our friends come over to eat. And so far everyone has said like man that was really delicious. What was it? And she says it's chicken livers wrapped in bacon.

*Trudy Scott:* I love that progression that you're talking about because a lot of people have a hard time and I think if you just go slowly and start to experiment you can definitely get there. When you talk about all those benefits, the other thing that we see with liver is good amounts of B12.

*Terry Wahls:* B12 is excellent. It just has such critical nutrition that our bodies need. Now I don't want people eating liver every day. I think three times a week is sufficient. But it is so good for us. Three times a week would be wonderful.

*Trudy Scott:* Great. Now I've got another follow on question from the diet and that is the high consumption of the dark leafy greens. Do you find that any people consuming this diet have an issue with oxalates or develop an issue with oxalates due to the high oxalate content. And if that's the case would they then switch to some of other vegetables?

*Terry Wahls:* So we have a couple of observations in our lifestyle clinic. If people have kidney stones then I send them to our dietician that's part of my team to personalize the diet according to their particular kidney stone type. And our dietician does have a protocol of low oxalate greens and that's been very helpful. So if people are worried about oxalates we do that. When people say like oh my god, all these greens are high in oxalates. And if you have oxalate stones by all means you certainly want to work with a dietician to switch to low oxalate greens. We do note that some people their microbiome and their unique genetics mean that they can't tolerate 3 cups of green. They can maybe tolerate one cup of green. If they do any more than that they have gut issues.

And my response is then pay attention. If a cup of greens is all your body says it can tolerate then that's fine, that's all you have. If you have kidney stone issues absolutely you need to work with your dietician to have it personalized. If you're on a blood thinner Coumadin you'll need to work with your practitioners to have a very consistent intake for your greens. And some people for example find that they don't do well with sulfur vegetables and they have to have a much lower intake of sulfur vegetables. So we absolutely are all unique and the recommendations that I provide may not be quite right for every individual which is why I'm always very careful to say please work with your practitioner to personalize these recommendations to fit your unique health issues.

*Trudy Scott:* Great. We all are unique and we need to find what's going to work for us. So thanks for that clarification. I have just found that oxalates can be an issue even if you don't have kidney stones and it can certainly be a factor with pain issues and even with anxiety. And if that's the case then definitely consider whether oxalates may be the issue and then you would want to adjust the diet. So I'm glad we clarified that.

Now I really wanted to talk about the ketogenic diet because I don't often have a lot of people talk about this and you said that you were interested in sharing a little bit about traumatic brain injury. And I know that this is beneficial for traumatic brain injury as well. So why don't we end with talking about this.

*Terry Wahls:* So the brain can operate on sugar but it can also operate on ketones which is probably how we survived famine and war as a species and drought. If you abruptly drop your blood sugar you can go into coma so one has to do this gradually in shifting from burning sugar into burning fat. We can do that through dairy fat and butter. That was originally how it was done. If you shift the fat to a medium chain triglyceride which is in coconut oil or coconut milk then your body can make more ketones out of that and you're able to eat more like 60 to 80 grams of carbs which is what I recommend is the coconut milk, coconut oil, medium chain triglyceride ketone based diet. Because I think we need to eat carbs to feed the healthy microbiome in our gut.

By having more ketones in the brain we shift a lot of the chemical processes in the brain, cool off the inflammation, bypass them with a broken processes in the mitochondria. We stimulate the production of more mitochondria and make the mitochondria that are there more efficient. We stimulate the production of nerve growth factors, the connection of synapses. We can activate stem cells. So lots of really, really good things happen in the brain in ketosis. It can be very, very hard to maintain ketosis long term and I've come to realize that even in

the wild the Arctic dwellers, the people who we based all of our diet theories on even those folks get to have summer two months out of the year. And so after a year and a half of being I ketosis I finally decided you know what. I'm missing my berries. So when summer comes I let myself get out of ketosis. I eat my vegetables. I enjoy the berries as they come in. And in fall I'll go back and start eating a ketogenic diet again.

*Trudy Scott:* Do you notice any change in symptoms when you are out of ketosis?

*Terry Wahls:* So the first year that I was in ketosis it felt like I had enhanced mental clarity and energy and I could see the difference being in ketosis and not in ketosis. And I was monitoring blood ketones a couple times a day at that time. After being in ketosis a year and a half I couldn't tell the difference. So I sort of interpret that now in retrospect as ketosis was doing good healing stuff for my brain and apparently once it got caught up I couldn't perceive the difference anymore. And now when I go in and out of ketosis seasonally I can't perceive the difference the way I could originally. I know some folks when they're in ketosis like me they could originally sense that flip cognitively when they go into ketosis. I just think that's an interesting side observation though.

*Trudy Scott:* Very interesting. Well thank you for sharing that. This has been really fantastic. It's an amazing journey as I said and I appreciate all the information you've shared about the diet and some of the nutrients and the fact that you are doing this consumer training and practitioner training. We'll make sure that we share that. And for folks who are interested I highly recommend Dr. Wahls book *The Wahls Protocol* and if you want to take things further the event sounds like it's going to be absolutely fantastic. And then we also have a gift that Dr. Wahls has. It's called *Food for Thought* and I'll let you tell us a little bit more about that. I'll share a link to that so you can stay connected with Dr. Wahls and learn more from her.

*Terry Wahls:* Yes. So I do a lot of lectures to the public. This one was to college students about the critical role of food to improve their concentration, their mood, their attention. As you know a big issue on college campus. It was very well received and will have an mp3 lecture *Food for Thought* available for those who sign up for it.

*Trudy Scott:* Excellent. That sounds great and I will see you in September because we are both presenting at the Integrative Medicine for Mental Health conference.

*Terry Wahls:* Yes actually I'll be at two conferences so I'm doing the Integrative Health Conference and I'm doing the A4M Conference so I had to do a

little juggling to make sure I wasn't presenting the same day at both conferences.

*Trudy Scott:* It's the same weekend. Is it in the same city?

*Terry Wahls:* Same weekend. It worked out very well.

*Trudy Scott:* You are busy. I have not attended a A4M but I've presented at Integrative Medicine for Mental Health once before. This is my second time. I've attended many times. For mental health it's a fabulous conference and certainly join us to hear Dr. Wahl speak in person and I'll be speaking there as well on the amino acids. And then A4M - tell us what you're going to be presenting there.

*Terry Wahls:* So I'll be talking about my research and my story and I will be walking through again some of the latest research on using diet and lifestyle to stimulate progenitor cells which are our brain stem cells.

*Trudy Scott:* Fantastic.

*Terry Wahls:* We don't need to do stem cell transplants. We need to nurture the stem cells we have.

*Trudy Scott:* Wonderful. What a beautiful ending. And these are both practitioner only events just for everyone who's listening - just so you know. But the event that Dr. Wahls has is for the public. So if you are not a practitioner and you want to learn more the event that Dr. Wahls has is the one to attend. Any final words of wisdom for us Dr. Wahls?

*Terry Wahls:* Hail to the kale.

*Trudy Scott:* I love it. Okay that sounds good.

*Terry Wahls:* Thank you very much Trudy.

*Trudy Scott:* Thanks very much for joining us and thank you everyone for joining us on an amazing event on *The Anxiety Summit*. And I wish you all the best with all your research and your recipe book and your event Dr. Wahls. Thank you.

*Terry Wahls:* Thank you. Bye bye now.

*Trudy Scott:* Bye.

Speaker Blog: <http://www.everywomanover29.com/blog/multiple-sclerosis-anxiety-wahls-protocol/>

**Dr. Terry Wahls, MD, author of The Wahls Protocol**



Dr. Terry Wahls is a clinical professor of medicine at the University of Iowa where she teaches internal medicine residents, sees patients in a traumatic brain injury clinic, and conducts clinical trials.

She is also a patient with a chronic progressive neurological disorder, secondary progressive multiple sclerosis, which confined her to a tilt-recline wheelchair for four years. But thanks to the power of The Wahls Protocol, which is based on functional medicine and the Wahls Paleo™ diet, Dr. Wahls restored her health and now pedals her bike five miles to work each day.

She is the author of *The Wahls Protocol: How I Beat Progressive MS Using Paleo Principles and Functional Medicine*, *Minding My Mitochondria: How I Overcame Secondary Progressive Multiple Sclerosis and Got Out of My Wheelchair* and teaches the public and medical community about the healing power of intensive nutrition.

**Trudy Scott, CN**, host of The Anxiety Summit, Food Mood expert and author of *The Antianxiety Food Solution*



Food Mood Expert Trudy Scott is a certified nutritionist on a mission to educate and empower anxious individuals worldwide about natural solutions for anxiety, stress and emotional eating. Trudy serves as a catalyst in bringing about life enhancing transformations that start with the healing powers of eating real whole food, using individually targeted supplementation and making simple lifestyle changes. She works primarily with women but the information she offers works equally well for men and children.

Trudy also presents nationally to nutrition and mental health professionals on food and mood, sharing all the recent research and how-to steps so they too can educate and empower their clients and patients.

Trudy is past president of the National Association of Nutrition Professionals. She was recipient of the 2012 Impact Award and currently serves as a Special Advisor to the Board of Directors. Trudy is a member of Alliance for Addiction Solutions and Anxiety and Depression Association of America. She was a nominee for the 2015 Scattergood Innovation Award and is a faculty advisor at Hawthorn University.

Trudy is the author of *The Antianxiety Food Solution: How the Foods You Eat Can Help You Calm Your Anxious Mind, Improve Your Mood and End Cravings* (New Harbinger 2011). She is also the host of the wildly popular *Anxiety Summit*, a virtual event where she interviews experts on nutritional solutions for anxiety.

Trudy is passionate about sharing the powerful food mood connection because she experienced the results first-hand, finding complete resolution of her anxiety and panic attacks.

The information provided in The Anxiety Summit via the interviews, the blog posts, the website, the audio files and transcripts, the comments and all other means is for informational and educational purposes only and is not intended as a substitute for advice from your physician or other health care professional. You should consult with a healthcare professional before starting any diet, exercise, or supplementation program, before taking or stopping any medication, or if you have or suspect you may have a health problem.