Introduction to Dr. Ken Charlotte

Welcome to this episode of the Reverse Alzheimer's Summit. I'm so excited to introduce you to Doctor Ken Charlotte. He's an MD, has a master's in public health and is also I have MCP.

He's a board certified neurologist, consultant, functional medicine practice practitioner, assistant clinical professor, researcher, author, and speaker.

His medical degrees are from Emory University at the University of Virginia and Vanderbilt University. His functional medicine certification is through the Institute for Functional Medicine.

He's the author of the number one bestseller The Healthy Brain Toolbox. Neurologist Proven Strategies to Improve Memory Loss and Protect Your Aging Brain.

He's also coauthor of Nourishment the Brain two and A Food Guide. You can see why I've invited him here today. Welcome, doctor. Charlene. Thank you, Doctor Sanderson.

Pleasure to be here. So thanks for taking the time. I know that you stay very busy, and you have this unique perspective of being both a neurologist and having a window into functional medicine.

You also were involved with, Doctor Peterson's, 100 patient. I want to say clinical trial, but it's not a clinic. It wasn't a clinical trial. Yeah. Yeah. Okay.

Series A series, right. And the 100 patients in you were highly, involved in that. And you also have trials, peer reviewed, articles that have been published in the Journal of Alzheimer's and Parkinsonism.

And so you've been really involved in the science as well as teaching and learning, of course, about these multiple perspectives and how we think about brain health.

So I want to understand, kind of how you, how you marry all of this. Yeah. I mean, it is it certainly can be a challenge. It's a challenge for both practitioners, and it's a challenge for those who are attracted to this particular approach because it asks of our patients a very different type of engagement than, hey, I'm going to write you a prescription and I'll see you in six months.

So in my clinic, Charlene Health Neurology in Ozark, Missouri, we have a team based approach that helps our patients. That includes a registered license, dietitian, health coach, what we call Charlene health neuro fitness.

So movement as medicine. And then I'm sort of the captain of the ship. But what we do ultimately is we integrate the principles of conventional neurology, as you might experience, if you go to just, you know, regular neurologist in the community because there is value there.

But we take it to a whole other level when we integrate the principles of functional and regenerative medicine, where we can really ask the question why is it that we got sick and what do we need to do to get better?

So your patients are so fortunate, right? Because they're talking to a neurologist who understands that there is potential that they could get better.

Integrative Neurology and Functional Medicine Approach

So many of my patients tell me that story of seeing a neurologist and being told there's nothing they can do to get your affairs in order. Here's some aricept or some namenda, and it's probably not going to work that well.

Go see neuro psych and spend four hours in a super stressful environment only to tell them, yeah, you have dementia. So how how do you kind of think that neurologists should be doing this?

You know, very importantly, it still starts with a good old fashioned history and physical examination. What I often say to my audiences, and I speak on a lot of stages, is that there's a real temptation to say, well, just get an MRI.

You don't even need a neurologist. And that's absolutely not the case. We really have to understand what it's called the natural history of disease. This is a standard history, as might be collected in a good neurology office where we might say, okay, doctor.

Heather, first of all, tell me a little bit about what brought you in. And you said, well, I'm having trouble with my memory, right? Okay. How long has this been going on?

You know, when did it start? How did it progress? You know? In some cases, have you noticed certain things that actually make it better, or are you better on certain days?

Are you worse on others? Have you had any tests done? Those are very focused questions. But ultimately it's my job to elicit a narrative, right? A narrative that is the story of cognitive decline.

And sometimes that comes directly from the patient, sometimes that's assisted by a spouse or other family member or friend, because the patient either is unable to tell me that story, or sometimes, quite honestly, they don't think that there is anything wrong at all.

As you might know. Right. And it's very common in dementia that people are unaware. You know, I'm just kind of curious. What do you think is going on?

There are people in denial or because I know this can be frustrating for family members to be thinking, wait, you don't realize you didn't remember telling me that five minutes ago?

You don't even realize that you're getting lost in familiar places and I'm kind of wondering, like, is it denial? I feel like my my patients are very sincere when they tell me that they're not aware of their cognitive decline.

And I'm wondering if it's maybe part, the part of the brain that's affected or what's going on here, because other people are very, very aware of their decline.

That's right. Well, I'll tell you in that I would be guessing if I knew for sure, but I'll give you a pretty good guess. And there is actually an interesting word for that particular type of denial.

It's called a no. So agnosia. So for the listeners who want to learn a little medical language a know so agnosia is sort of like you don't know what you don't know.

But stepping back from this a little bit and thinking at that are Alzheimer's patients and even some of the things that they've told either myself or the health coach, is that they, they really are have to learn how to live in the moment.

You know, they their memory of an hour ago may not be there were a few days ago may not be there in Alzheimer's disease specifically. And there are other forms of dementia.

Oftentimes that there's more remote, hard wired memories are still fairly well preserved, at least for a while. But the nature of being in this in the moment is really also a lot about how the brain works when we're in that sympathetic nervous system mode or fight or flight.

Right? We don't want to think about yesterday. We don't want to think about tomorrow. We have to think just about this moment. And the part of the brain that is wired for that is called the limbic system.

And that's the part of the brain that is affected early on in Alzheimer's disease. So, of course, eventually many parts

of the brain are affected. All of the brain that's affected.

But we see these early changes in the limbic system, the brain that puts us especially in the moment. And I suspect that has something to do with this inability to really recognize the problem.

Yeah. And then, oh, wait, what do we look for in a physical exam? So you're talking about how the value there's this value in understanding the story.

There's also this value in doing a complete physical exam. Tell us what you're looking for there. It absolutely is. And again it's important to understand that while Alzheimer's disease affects somewhere between 6.4 and 6.5 million Americans, and it is the most common form of neurodegenerative dementia, meaning we use the term degenerative, it's, a gradual deterioration of brain tissue.

Remember, there are other types of diseases that may affect memory or other aspects of thinking. And those could be infections. They could be due to inflammation of blood vessels or the accumulation of multiple, strokes in the brain, in some cases advanced what we call demyelinating disease.

And I know I'm throwing out those big words, but those are diseases like multiple sclerosis can eventually present, with a diminishment of cognitive function.

Even within that degenerative category. There are other disorders Lewy body dementia, for example, fairly common and probably underdiagnosed disorder.

So as we go through the physical examination, the neurologist is looking for clues. They're looking for clues that help to corroborate the history or expand upon what we've learned in the history.

They are ultimately attempting to what we call localize the problem. Now, very often the general physical exam, meaning to a neurologist, we're testing everything from the neck up.

That's called the cranial nerve function. We're testing, strength and muscle tone.

How Dementia Is Evaluated in Clinic

We're testing coordination. We tap on all the reflexes, not just the knees, but in the arms and the legs as well. And we do this funny thing that's very characteristic of neurologists, which we're which is that we scratch on the outer edge of the foot, on the bottom of the foot.

And that's called a Babinski test or a test for a Babinski sign. And all of these. And I've sort of intentionally left out the cognitive or mental status things, which I'll circle back around to.

But all of these other aspects of the physical exam may give us a clue, for example, that this is not due to Alzheimer's disease. For example, we ultimately try to localize, the problem that means where with this, in this vast geography of the nervous system, is the problem located.

Again, it may be a little less easily localized when the rest of the physical exam is entirely normal. But now we can circle back around to what it's called the mental status exam.

And that's broken down into different categories. We often typically think of short term memory and Alzheimer's disease. So if I said, okay, doctor Heather, I'm going to give you a few words to remember.

And in a couple minutes I'll ask you what they were. And then you just draw a blank. Right. That would be very common in something like Alzheimer's disease.

We call that cognitive. We call that a cognitive domain or in other words, short term memory or delayed memory as a cognitive domain. But there are other domains, for example, executive functioning, which is sort of a higher order

of thinking.

You know, how you put things together like a complicated summit, right? All of the parts. How do those pieces come together? Recipe. How do you visit a lot of how do you do laundry.

Right. That is yes. How do we function in the world? Are our activities of daily living that are more complicated than just going to the bathroom 100%?

So, you know, how do you operate the microwave? Or, you know, how do you operate that those are executive functioning planning language, attend in in constant concentration, orientation, knowing where you are, what day it is, what's the day, what's the time, etc.

all of those are cognitive domains. So those are very important to go through when we're evaluating our patients cognitive status. Because for example, of delayed memory is entirely preserved but executive functioning is affected.

This may not be Alzheimer's disease. It might be a a. It can still be dementia can still, you know, but it may be maybe something called frontotemporal dementia for example.

Right. So we have to do this detailed evaluation that's actually a little bit more about that. Why does it matter what we call it. Well so that's an interesting question because I hope we'll get into it. Now.

It's help when we get into it later. But okay. Because I find and you know, I'll offer my personal, unique perspective that this is really where at a stage in medicine where when we use all the tools in the toolbox, I call that integrative medicine.

I don't call it functional medicine. I don't call it conventional medicine. Yes, we do both of those things, but when we combine them together, we are integrating.

Okay. So fundamentally what is going on is in conventional medicine, if you think about it, our goal is to make a diagnosis right. It's all timer's disease.

We have to demonstrate that there is a decline in at least two cognitive domains, one of which is memory. I call that amnestic like amnesia. Right. And then there's also, the inability to perform certain what we call instrumental activities of daily living.

And that is the clinical definition of Alzheimer's disease. So the doctor would say, okay, based on what I've gathered, and we can go even deeper than that for the diagnosis.

You and I may want to talk about that, but based on what I've gathered, I think the diagnosis is all timer's disease. Right. And what is the traditional doctor do but pull out their prescription pad and write a prescription for something like donepezil or memantine, two drugs that you mentioned by brand name.

There are some newer or eight. There is a newer treatment we may want to talk about as well. But at any rate, what are they doing? But treating the disease right.

What is functional medicine do? Functional medicine is patient centered or person centered. It's not disease centered. So we strive to understand the a different type of narrative.

Well how did you get here and what is keeping you on that trajectory. And by taking the time and these can be 60 90 minute interviews and like what happens in the typical office, you know, ten minutes you have a diagnosis and did luck see it six months.

Right. We take the time to really understand your life narrative because it's Doctor Bredesen says, you know, there are 36 holes in the roof at least, right?

Functional, conventional medicine says it's one thing. It's a diagnosis. Here's the drug. Functional medicine says let's identify all the different causes.

And while you're absolutely correct in the sense that in some respects, in many respects, functional medicine is really an approach that is independent of the diagnosis, the reality is in the clinic and we can talk all we want.

But when it comes down to it, you know, we are imperfect human beings and we are imperfect practitioners. And life does happen and bad stuff happens to good people.

And it is really necessary, you know, to squeeze all of the benefit out of every aspect of medicine we can provide to our patients the best quality care that we have an awareness of this disease and its natural history, i.e.

how it progresses typically over time. And what are the many things that present to us, like the patient not realizing that there's a problem at all, or perhaps thinking someone is breaking into their home and stealing their money?

Another common problem. We have to understand that we have to be prepared and as practitioners to manage those dimensions and to offer, if nothing else, reassurance to the patient and family that we recognize this as being very much part of that disease process.

We at the same time, I believe, have a moral obligation to work with that person in a person centered or patient centered way to really help them identify the contributing factors, both that got them there and that are mediating or keeping them on that trajectory, and help them to change the direction of where things are going.

And it's very true that many things that we talk about, or you have talked about, I'm sure, in this summit, are a risk factor where contributing factors to a lot of different diseases.

So have you seen Alzheimer's be reversed in your practice? If if we're talking about the accumulation of amyloid beta and tau protein in the brain, we can definitely reverse in the sense let me be clear that cognitive functioning dramatically improves, at least for a very valuable and worthwhile period of time.

If we want to use the word cure, are we curing Alzheimer's disease? We are not curing Alzheimer's disease. I wish we were, you know, desperately.

Understanding Alzheimeru2019s, Amyloid, and Tau

But we're not. But, you know, if we can help that person return to a normal level of cognitive functioning and help them stay on that trajectory, it really makes a huge difference in their lives for their spouses and loved ones, their children, their quality of life.

I always say that the operative word in functional medicine is functional, right? It's function. What is your function? Ultimately, do you really care whether or not you have a certain level of amyloid beta or tau protein in your brain?

That's kind of for me to worry about, right? And we even know that there are people who may have very high levels of amyloid tau, do not necessarily have the diagnosis of Alzheimer's, or they may and they function at an extremely high level.

Right. Let's talk about that. Right. Because my understanding of the literature is that this beta amyloid plaque hypothesis is a and maybe helpful. And, and potentially it really has been harmful because it's derailed us down this kind of blind alley for so long as a as the assumed explanation for the pathophysiology for dementia and Alzheimer's is what they say.

But more and more dementia is kind of get put under the umbrella of Alzheimer's versus Alzheimer's being one of the things under the dementia, under the umbrella of dementia.

And so my understanding about the beta amyloid plaques and how proteins is that they're present in the majority of

people's brains. There's about like 1% of the population at any age that doesn't have any beta amyloid plaque.

And then that 30% of people over 65 have enough beta amyloid plaques to have a diagnosis of Alzheimer's, based on the pathology, based on what we would see under the microscope.

And then there's a bunch of people with perfect cognitive, function who have significant amounts of beta amyloid plaque. And when we reduce beta amyloid plaques in the brain, we don't get an increase in cognitive function necessarily.

So when we put all of those things together, and I want to make sure that you also have that understanding of sort of the the landscape, of our thought process around Alzheimer's equaling beta amyloid plaques that there's there's this big disconnect.

So are are you on the same page? Have you also understood that? I agree mostly with what you're saying? Yes. I mean, I absolutely think that to some degree we've been derailed by, by this amyloid hypothesis when we should be looking a lot deeper, as you know, from the work of many scientists, including Doctor Bredesen, including people like Rudy Tanzi, up at, at Mass General, at the, the accumulation of soluble amyloid appears to have a very, at least in the short term, beneficial role that it plays in the brain reacting to inflammatory signals in the cellular environment.

So it's attempting to protect us. It's it it does a lot of things. You know, it's a chelating agent has you know, tons. His famous experiment where he and his partners, now deceased, they infected mice with salmonella and caused a form of brain inflammation called salmonella encephalitis.

And they did this in a mouse that was able to produce amyloid beta protein. And then in mice that were not capable of producing this amyloid protein. And the ones who produced amyloid protein in their brain actually survived this deadly infection longer than the ones who did not.

So it's clear that amyloid plays a normal physiological role in the brain. But it's also clear that there's pathological amyloid or insoluble amyloid that in some cases can accumulate in the walls of blood vessels as amyloid beta 40 or within the brain.

And that seems to be connected to the levels of what are called tau protein, which are really, part of the breakdown products of nerve cells as they're destroyed and these proteins accumulate in the brain tissue.

But we also know from, experiments that if we remove them, we'd say with monoclonal antibodies targeting, the amyloid that tau protein levels will also improved.

So it's a mixed bag. It's not that we're totally misdirected, but I think that we probably just haven't gone far enough down the tree of causation. So how do we do that?

Right. Well, we have to do that in a couple different ways. And I like that question because it allows me to talk about my approach as being more integrative it.

So we do have to make the diagnosis. We do have to understand that one of the common endpoints of Alzheimer's disease is the accumulation of this protein in the brain, and that it appears to be connected, maybe not directly, but it appears to be connected to the destruction of nerve cells and this second protein that's very important because it the accumulation, this other protein called tau is the protein that's specifically associated with the decrease in cognitive functioning.

Cognitive functioning does not take a nosedive until tau levels typically reach a certain level. And this amyloid precedes the amyloid accumulation precedes the accumulation of tau protein.

So we have to recognize that this is probably playing a role, but we're pretty far downstream by the time that's happening. So we have to go back and think about the functional medicine model.

Functional medicine really asks, why is it that we get sick in the first place? And fundamentally, this boils down to three things always, no matter name your disease almost everything.

If we exclude trauma and if we exclude, maybe some things that people are born with. Although you could argue even that plate, we could use the same model for that.

It comes down to genetics, lifestyle and environment. That's the basic equation. And we know that lifestyle and environment influence our genes. We call that epigenetics, right?

Influencing the expression of our genes. And there's been numerous papers that have been published on this general topic, and what the listeners and viewers of this, of this summit may be surprised to find out, is that our genes play a surprisingly small role in most diseases, that most diseases are so heavily influenced by lifestyle and environment that if we can make modifications in those areas, we can alter the expression of our genes and we can change the trajectory of that illness.

So if we think of my dear friend Doctor Terry Walls, a little digression because she has multiple sclerosis, but she has many people with M. S. who follow her and are very, you know, take in by her own hero's journey to reverse her multiple sclerosis and go from a top reclined wheelchair to being a very dynamic, intelligent, you know, successful, you know, individual who's now sharing her message, right?

Yeah. And for listeners who are curious about hearing that firsthand, she is interviewed on this summit. So head on over to her talk. You will definitely enjoy that.

So at any rate, sometimes I have to remind my patients, you know, Doctor Ball still has M. S. she has M. S. right now. That doesn't mean that what she's sharing in her message isn't true.

It is absolutely true. It means that we can overcome these things. We don't have to be the disease. Right? I may have M. S., but M. S. essentially doesn't have me. Right.

So we need to be doing that with Alzheimer's disease. Same principles, same approach, understanding what we call the triggers and the mediators, and then working with our patients to help make corrections in those areas through a whole variety of strategies, but fundamentally through sleep, nutrition, movement, what I call stress, resilience and connection.

Those are the fundamentals that we can never, ever, ever get away from, right? We're never going to make this better by taking a magic supplement. But if we do that, things improve.

And do you see all of my patients? Right. This is a complex approach. And I think that complexity I say this over and over again on the summit is that this is a complex disease and we need, a solution that appreciates and matches that complexity.

Lifestyle Drivers: Genetics, Sleep, Diet, and Stress

And yet that can lead to overwhelm, particularly when we're suffering with cognitive decline or our loved one is and we're juggling a lot. So many of my patients are being cared for by an adult daughter who has a full time job and kids to take care of and a house to manage, and she wants the best for her parent who's suffering. Yes.

So when we when we take this approach, this functional medicine approach, Doctor Peterson's approach, and we start patching all these 36 holes, do you see that one of those holes is maybe more important or bigger?

Well, I would say it's easy to forget about how powerful the lifestyle medicine component is here. There's often, you know, we love supplements. Our culture loves supplements, I sell supplements, I don't mind doing that.

They're important in the overall equation. And I'm always asked, you know, hey, do you take this, do you take this? What do you recommend that kind of thing?

I say, look, you know, we utilize supplement because we do some deep dive testing and we we can identify some very major deficiencies that usually most regular neurologists wouldn't even bother to look at.

And because time is very important here and there may be some genetics involved as well, you may not be able to say utilize. And I'll just use an example that you're well aware of the nutrient, folate as you should. Right.

Maybe you have a genetic alteration and a pathway that kind of puts a bottleneck in your utilization of folate. That's critical in the Alzheimer's disease story.

So we're going to make a correction here with this targeted supplementation. But if we're not sleeping, if we're not following an anti-inflammatory diet, if we're not moving our body, if we're not dealing with stress because, you know, for anyone who met who is either affected by or knows someone affected by or works with people with Alzheimer's disease, what happens to memory when we're in that fight or flight mode down the toilet?

Can't remember anything, right? So we have to pay attention to those pieces. And they are very, very powerful pieces of the puzzle. Right? The supplements are supplemental, right.

Adjunct. Absolutely right. And so what do you recommend? Let's start with diet. What do you recommend people eat if they're struggling with dementia already or looking to prevent it?

I do want to say this is very important to answer your question. Because we do often get that adult daughter bringing mother or father in that our biggest impacts really are when we catch this disease at a very early stage.

You know, if mom or dad is in the memory care facility in the nursing home, it doesn't mean there aren't things that we could do to improve quality of life, even at that level.

But if we're talking about real disease reversal, if we're talking about improving cognitive functioning, then the options may be much more limited. They may even be limited by the fact that they are dependent on the meals that are served to them and have very little choice.

And as you know, too often the meals are not what we should be eating. Well, yeah, this is why I created Marama. Marama is a residential care facility here in San Diego, where we have an immersive experience and Doctor Benson's protocol.

And at the moment, we're the only place in the world doing that and offering that. But my hope is that, you know, by starting Marama, having conversations with doctors like you, having this Alzheimer's Summit, that the entire senior living industry starts to change because that daughter calls and say, says, hey, I want a place for my mom down the street.

I don't I can't send her to send you. We don't have space at Miramar right now. And she asks, do you have a brain healthy diet available? Do you have brain engaging activities available throughout the day?

Do you have enough staff to encourage my mom to partake in those activities? Do you have a gym where my mom can go get exercise, and she has enough support to get safe and effective exercise?

So I'm so glad that you said that, because that was part of what inspired me was, people coming in and saying, hey, you should give a talk at this, this memory care facility.

And I was just devastated to, you know, have to respond at that point. It's too late. There's no way we can do it if they're being fed cereal for breakfast and with sandwiches for lunch and pasta for dinner, and cake and cookies for dessert, and then parked in front of a TV all day, it's just not going to work.

Not going to work at all. And this happens in our hospitals, as you know as well. It's somebody has bypass surgery and they're being served coke right afterwards. Right.

So we really have a problem. Now to answer your question about diet, there are several levels to this because most importantly, we number one have to meet people where they are.

We are asking people to change. Some people are not ready for change. Some people don't want it. They're not a good candidate for this approach, right?

They have to be vulnerable. They have to be open. They have to be willing to say, okay, maybe my diet hasn't been the best right? But as practitioners, we also have to own it a little bit because we have to meet people where they are.

You know, if you're if you're part of your daily staple. As for Doctor Peppers Day and I say, okay, we're going to just get rid of all that. We're going to put you on a ketogenic diet or whatever, you know.

Well, that's a set up for failure as well. So we you know, we use this term Smart goals, you know, specific, measurable, achievable, realistic, time based.

What can we do to start off. It doesn't mean we don't have those big lofty, audacious goals, but we have to meet people where they are and get them to make incremental changes.

And from a coaching perspective, it really comes from within, right? What what do you think you're willing to do to change what works for you? Well, I think I could probably do this because if I just tell you, you probably are less likely to do it as well.

And the why are you here? Right. You're not going to do this because somebody tells you. But people are often driven by those really deeply emotional, factors in there.

They want to get on the ground and play with their grandchildren. They want to be there when their grandchild graduates. They want to be there when that next generation is born.

And they want to be engaged and able to remember and have those conversations with the people they love. And so attaching it to something really meaningful for that individual, can often help to motivate change.

Absolutely. It's very, very important idea. And and that's why it's so prevent and is really a harder strategy than treating something, you know, once it's actually happening because there's an immediacy of need.

Right. But then the next step to this is, really taking a good nutritional history. And we do try to quickly get rid of the most inflammatory things sugar, you know, processed foods, maybe dairy.

There are other things that, you know, would broadly be considered inflammatory. But those are probably some of the bigger ones right there. And then we want to look at the nutrient density of the diet, because while there is a lot of banter and interest, for reasons that are very reasonably reasonable and scientifically based about a ketogenic diet, the risk of going immediately into that sort of diet is if you are nutrient depleted, entering into this in, you know, engaging in this conversation, engaging in this process of change, the risk, not saying that, you know, this isn't like everything is the same.

All ketogenic diets and obviously they're not. But the risk that we can run is by limiting certain nutrients from the front end. Macronutrients in this case. Right.

We may also be limiting micronutrient. So we may be limiting, say, phytonutrients from vegetables that are rich in antioxidants and anti-inflammatory compounds.

So I would rather bring someone into a lower refined carbohydrate diet. Maybe they're not in ketosis per se, but let's work on the nutrition. If you've just never eaten a vegetable in your life.

And as crazy as that might sound, there are a lot of people out there who don't eat vegetables. That's where we

need to start, right? That's where we need to start.

So while there is a sense of urgency of where we want to go, we want to reverse this terrible disease. We do have to take in in kind of an incremental way, or we won't be successful in the long run.

One of the issues I see my patients run into is that mom is aware and wants to do something about it. She's got a diagnosis of dementia, maybe, or she's going in that direction.

Maybe it's MCI and daughter is highly educated, gets it. She's read Doctor Reticence books. She's listened to the summit. But her brother, who's also clean a role, says, no, no, we need to listen to meteorologists.

They really know what they're talking about. And they said, there's nothing you can do. So why are you wasting your time and energy and money trying to get mom to do all these things?

I want to have a cocktail with her at 5:00 when I get to go see her. And, you know, dad is still around and he's he's listening to both daughter and son and they're arguing amongst each other, where I will say that one of the solutions I see is getting the research out there, which I can't thank you enough for being for contributing to that, because I think the more often we have these clinical trials showing up in the literature and these case studies showing up in literature, the the less amount of time people can deny that this is and this is actually something that can happen.

But what do you say? And that kind of dynamic, that family dynamic, it is very difficult. And it is possible potentially to reach an impasse there. But what I do in my clinic is I invite everybody to come.

Right. Functional medicine even let's just cognitive, decline aside. We mentioned mass earlier on. I also treat ALS. I treat Parkinson's disease, some of whom have cognitive impairment.

But the point is, if you have a significant other, if you have children and they can come and some of them come on the phone, meaning it's on speaker phone, as many people as can be at that visit.

It's better because no matter what happens in the office, the real healing happens at home. And if somebody says, you know, you may be eating kale and grass fed beef, but I'm going to McDonald's and bringing that home and eating it right in front of you.

That is never going to work, never going to work. So we do try to get everyone on board again. Is this for absolutely everyone? Yeah. No. Most ideal. Perfect world it is.

But realistically it probably isn't because not everybody is ready for change or their family members who can't. Where, you know, what I sometimes see is that educated adult child is totally with it, but the spouse is still there.

They don't really get it, and they even may have just a little bit of cognitive impairment themselves. And and really the affected individual, the patient, they're living with, this spouse. They're not living with the adult child.

So it becomes that spouse's responsibility to fix those meals and do all the supplements and the hormones, which is a whole other discussion. And, and, you know, and, it becomes too much, you know, in our office, my wife Valerie, is it just did just such a critical, you know, team member.

Family Support, Care Environments, and Early Intervention

And she is, a health coach, a life coach, but she has, like, 40 years of experience as a gerontologist. So we meet people where they are and sometimes what we end up doing is more gerontology and social work.

Right. And a little family dynamics. But that's all part of the healing process. It's it's totally necessary. And it's just part of the reality of treating patients who have cognitive decline is that it takes a village. Right?

They're they're almost like children again. And it's going to take support and all getting on the same page. And yeah, I couldn't agree with you more that this isn't for everyone.

Not everyone is going to hear this conversation or hear this summit or get the medicine book and decide that it's for them, and that's okay, right? If this becomes too stressful or too much to take on, that is okay.

It's not anyone's fault. And yet, that doesn't mean that we some people can't do hard things right there. And there are things that are worth it, and it's a lot less hard.

It's a lot less money. It's a lot less cumbersome when we start early, when a patient is younger and their earlier on in the disease process. So getting the information out there is our job making sure that people are armed with the information that it is possible to reverse cognitive decline, that it's earlier when it's it's easier when it's early and that these are the steps you take.

So you talked about diet. I heard I've heard you mentioned sleep and stress and hormones and infections. And so I want to go through all of these things and hear how you communicate with patients.

The importance of these pieces. It does start with that basic history. So we have to find out what is their sleep like. You know, are they asked or do they have a diagnosis of sleep apnea?

This issue of sleep apnea, when people stop breathing in their sleep, either because their brain fails to send the signal to their diaphragm or because their upper airway closes off.

It's a major risk factor for dementia, including Alzheimer's, heart attack, stroke, etc. it definitely shortens life. We have to work on sleep even when there are other factors interfering with sleep, like, you know, sort of stressors that kind of keep us up at night or wake us up at 3:00 in the morning.

We do have to work on that because I always say that sleep is more than a time of rest. And among the many things that occur during sleep, it's memory consolidation.

So it is critical that we get that 7 or 8 hours of restorative sleep and stay on the same schedule and not use things like Benadryl to sleep. There's, you know, over the counter sleep aids that actually block the chemical involved with memory called acetylcholine or alcohol, which fragment sleep and causes problems with sleep architecture, so that we go into what's called rapid eye movement, sleep very quickly, but then we rebound out of that and wake up in the middle of the night and wonder why everybody else is asleep, right?

Not to mention, yeah, I'd love to hear your thoughts on benzodiazepines for sleep. Yeah, well, of course they're habit forming. And they lead to a problem called tacky filler access, which means you need increasingly higher doses to have the same benefit.

And we know, at least from a statistical perspective, they appear to increase the risk of developing dementia. And also that these are medications like Ambien and Xanax, very commonly prescribed medications for for sleep.

And so being aware that this could be contributing to your cognitive decline if you're taking them. And there are other alternatives to this that can help actually support brain function 100%.

So we definitely have to work on sleep, but maybe it just takes a sleep study or an overnight oxygenation, study where they just wear a little probe on their finger at home and we can at least look at what happens with oxygen, which is a proxy for our our breath, for our breathing.

Right. As we breathe through the lungs and extract oxygen. Doesn't diagnose someone with sleep apnea, but it sure points us in the direction that we may need to take a deeper dive.

Right? We have to get our bodies moving. I take a exercise or movement history and it's great. Any kind of movement in general is great. It's so much better than sitting on the sofa and watching TV, as you said, right?

Even having those standing workstations and all that at work. But for those who use movement as medicine, we probably need to go beyond walking right now.

Not everybody is capable of that. Is CrossFit style, high intensity interval, you know, training, routines. But what we try to do in Shoreline Health neuro fitness is really combine cognitive functioning with movement.

So more complex patterns. Simple example would be boxing, right. How many combinations can you remember if I say, you know, two rights and a left or whatever. Right.

And it can get increasingly complicated beyond that. But that's a simple example. We certainly want to work on core body strength, because falling in the elderly is a huge problem.

So that's part of it as well. But getting the heart rate up, combining strength with cardio, is ideal in this situation and hopefully something that involves thinking and memory and processing and that sort of thing.

And then finally we also talk about stress or stress resilience. This affects all of us as human beings in one way or another. And we do remind our patients that both physical and emotional stress are, perceived by the brain in the exact same way and result in the same types of changes.

The fact all of the systems that we talked about in functional medicine are our mitochondria and our immune system and or detoxing and all of those things.

Right. So we do have to work on that. In our, our practice, a big component of that is the, heart, heart math, tool. We use the inner balance from heart math.

And we have lots and lots of data on the use of heart math and cognitive decline. So it's not very, very good back system. It is it is ultimately a form of biofeedback.

So that's really important. And not to, dismiss or leave out the importance of human connection in relationships. And we have a patient who's done extremely well.

She's Napili for for I've been working with her for several years. She has maintained her level of cognitive functioning on the Montreal cognitive assessment, which is a tool that we use in the office that goes from 0 to 30, where 26 to 30 is normal.

She's probably Hubbard in that sort of 22, 23 range for several years now, and she's a 44 and she's actually about 80 years old, which, you know, by that time, you know, that that age, she should really be in the single digits.

So it's remarkable. But her story not only includes all the things we've talked about, but about the same time as I met her, she had been a widow for seven years, and had largely been by herself, but to her good fortune, she had met a gentleman because she enjoyed dancing, and they were going dancing once or twice a week, and once or twice a week became 3 or 4 times per week, and 3 or 4 times per week came.

Hey, let became hey, would you like to travel with me across country in my camper and see the United States? So, you know, I, I can't quantify it for you, but I am 100% certain that that part of that dimension, while it didn't happen in my office, had a major contribution to her ability to maintain her cognitive function, it's just as another data point at Morava.

We had our first Covid positive resident there in January of 2022. So just recently and, we of course isolated everyone because we didn't want it to spread amongst the facility and our residents were still, you know, communicating.

And they were exercising. They were doing all of the steps of the program. They just weren't doing it with their peers. They were doing it still with the caregivers.

They'd go for a walk. We have a casita circuit in the casita where we do red light therapy, and we have, rebounders and a bike. And we do contrast oxygen therapy and weights and, you know, a lot of what you're describing.

And then, you know, there's art activities and other cognitive engagement throughout the day, meditation and all of the residents were still doing this.

We also do an organic ketogenic diet as our base. And so all the residents were doing each of these things, of course, getting their supplements and medications.

But they were isolated from each other. And in those ten days that they were isolated from each other, we saw falls go up. We had three falls in ten days, which we had had three falls in a year, and we had more disorientation, more incontinence, more irritability, of course.

And so it wasn't just being isolated, but even just isolated from their peer group, from the people that they really connect with. And it just blew my mind.

And our one Covid resident, she had a sore throat for two days and had a stuffy nose for five. Right. So very mild Covid, which we don't want anyone in our in our facility getting Covid.

But the ramifications of isolation were profound and it took about ten weeks. After ten days of isolation from each other, peer group only took about ten weeks for everyone to get back to baseline.

It's devastating. It really was. And then when I think about the magnitude of cove of isolation during Covid over the past two years, of course we don't want anyone dying from Covid.

I totally took the Covid very seriously. And yet there are these side effects of the intervention, of reducing a flattening that curve. Yes. So it's very important.

All of these and what we're ultimately talking about is controlling drivers of inflammation. You asked me very early on how we integrate, right. How do we take the traditional neurology.

And I know that, you know, has been a lot of negative press around these monoclonal antibodies, and that's probably a whole other discussion. But I think it is worth at least considering the fact that we we don't have these 100% cures for this devastating condition yet.

And yet we can do a lot. We apply these functional medicine principles and people get better when we remove those inflammatory drivers, and we see improved function in the brain.

Biomarkers, Clinical Trials, and Finding the Right Diagnosis

A logical next step may be okay, now do we have a tool that gets rid of this insoluble amyloid that has accumulated in response to the inflammatory drivers?

And the answer is that we actually do so while the data has yet to be published, because no one's actually looking at the combination of functional medicine and monoclonal antibodies that target amyloid, I actually think that is a potentially very powerful combination.

And we have some opportunity right now to do that. In our in our practice, because we do a lot of clinical research, although most of our patients on these treatments are blinded and we're blinded as we're doing a large scale clinical trial.

So we don't actually know if they're on, the treatment drug or not. But we do have access to, as you can imagine, we're studying another one called Donanemab.

We have access to, as you can imagine. And I'm hopeful that if we are able to use it in an unblinded fashion and

that's sort of in question now due to more politics.

That we'll be able to collect that data with our with our patients. I think this is really exciting, this combination, right, of getting rid of the causal factors and then getting rid of the damage.

It's almost like a scar tissue that's built up in the brain. And if we could get that, then is there potential to get even more cognitive function back?

And I think that one of the dangers and one of the sort of habits we've seen in this beta amyloid plaque hypothesis, Ali, is that the the primary outcome measure is how much beta amyloid plaque is there, when really what we care about is the reason that we're all here is are we getting more cognitive function?

And so making sure that those are the primary I'm sure that you're doing that. Of course you wouldn't. I wouldn't have invited you on here. Well, well it is still a the so that that does get into some the the how the accelerated approval of ag home tragic came about.

But it's absolutely true. The primary outcome measures are cognitive decline or you know have we change cognitive decline. Use something called the Adas cog the CDR.

These are just scales that neuropsychologists use where people like me get trained on, to use to evaluate our patients cognitive functioning is absolutely no box that was designed for exactly this kind of thing, because cognitive function, dementia and Alzheimer's are such a massive societal problem, right?

This is going to bankrupt Medicare. The demographics here are astounding. And as the baby boomers age, this is a massive, massive, massive unsolved problem.

And it's we are it's coming for us and we need good solutions. And so a lot of resources have been thrown at this, including tools used to measure, like the NIH toolbox, everything that you described.

Right. And in clinical trial we did in my office these Cambridge brain sciences, which is now covered by Medicare, which is they call it a battery of tests that, like you said, they look at different, types of memory, executive function, language, problem solving, attention.

So these kinds of tools that help us to create objective markers and use the Moca as more of a clinical. You mentioned the Moca, the Montreal Cognitive Assessment.

We use it in my office. I'm sure you do, as well as more of a clinical screening tool. Very easy on the scale of 30 for someone to say, okay, my score on that last time was 27 and now it's 25.

I'm going in the wrong direction. But the battery of tests on a kind of science side on a clinical trial side help give us more nuance and more understanding of what's going on.

And we need to screen for behavioral changes and instrumental activities of daily living as well. So there's something called the NPC, and there are various activities of daily living skills.

However, it is so important for our listeners and viewers to also understand that the current working definition of Alzheimer's disease is dependent upon the the demonstration of what we call biomarkers, or amyloid plaque and tau protein in the brain.

In other words, it used to be 2 or 3 decades ago that we would send our patients for this painful, as you put it, neuropsychological test that lasts for two eight hours.

I don't know about you, I don't I don't have Alzheimer's disease, knock on wood, but I've I've taken one of those tests and they're mentally exhausting.

How can we expect our Alzheimer's patients to do that? That and I have not you know, I work with Neuropsychologists, I respect them I know these tests are important, but no longer are these tests valid when it comes to making the diagnosis of Alzheimer's disease.

In our office, we primarily look at spinal fluid. We can do Pet scans, but the reimbursement for amyloid entire Pet scan is really not there. The proclivity there pretty t test maybe hopefully will be approved.

But it's important. That's a blood test, by the way. We love the idea of doing a blood test for Alzheimer's. But the thing is, that only tells us the probability of developing Alzheimer's.

It doesn't tell us yes, you have it or no you don't. So we have to look at spinal fluid. In the end, if the suspicion is there to confirm the diagnosis.

And this is this is a little bit political too, right? Because like why. But like what does it matter. Right. If there's if you find amyloid in the blood or in this or spinal fluid, like what, what would we do differently?

I guess if you're using Aduhelm or if you're using those type, that type of intervention, then there would be a decision right there. It would be remarkably different potentially, especially if we're using those monoclonal antibodies or other therapeutics.

There's not a single person who can go into any of our clinical trials without, you know, biomarker confirmed disease. But we have patients who are referred to us all the time who in their family, they're convinced either because their doctor told them or their family told them, or they've self-diagnosed that they have Alzheimer's and they don't have Alzheimer's.

What a relief. Doesn't mean we can't do things to help your brain, but what a relief to know that you don't have Alzheimer's disease. So we can't say, well, just because the only choices of available treatments are sort of the cough suppressant for the cold, that we shouldn't be, you know, precise about our diagnosis.

And again, it also helps us understand what is the natural history of this disease. It helps the family. It helps the patient. Ultimately, as human beings, our brains see truth and understanding.

Our brains seek the narrative that helps us explain or experience it in the world around us. And making that diagnosis, even when we don't have good treatments, is the first step in that journey.

They say, thank you. I knew something was wrong with my brain. It's not the best news. But then our obligation is more holistic providers is to give our patients hope.

Yeah. And the best treatments available. I want to make sure that all of our listeners know how to find out more about your center in Missouri. And, and also all of the things that you your books.

I know so many people are going to be inspired to to learn more about what you have to offer. Thank you. That's way to learn about us. And we are on Facebook and LinkedIn and, you know, YouTube and all that good stuff.

So you can definitely look us up there. But the best way to learn about our practice is to go to our website and that is functional medicine dot doctor.

And it's just spelled out functional medicine Dot doctor. That's our website. And there's tons of information there, including an invitation to schedule a complimentary telephone call with my coordinator to learn about your needs and how we can help you.

Doctor Shannon, thank you so much for joining us. It's been a pleasure. I knew this was going to be a great conversation. The moment that we were introduced to each other, and I've learned so much from you.

I so appreciate your perspective and you just taking the time to share your expertise today. Thank you, thank you,

appreciate.