



## **A Neurologist's Perspective - Reversing Alzheimer's**

Heather Sandison, N.D. interviewing  
**Kenneth Sharlin, M.D., M.P.H., IFMCP**



### **Heather Sandison, N.D.**

Welcome to this episode of the Reverse Alzheimer's Summit. I'm so excited to introduce you to Dr. Ken Sharlin. He's an M.D, has a Masters in Public Health and is also IFMCP. He's a board certified neurologist, consultant, functional medicine practitioner, assistant clinical professor, researcher, author, and speaker. His medical degrees are from Emory University, 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 best seller, "The Healthy Brain Toolbox: Neurologist-Proven Strategies to Improve Memory Loss and Protect Your Aging Brain." He's also co-author of "Neurishment: The Brain Tune Up Food Guide." You can see why I've invited him here today. Welcome, Dr. Sharlin.

### **Kenneth Sharlin, M.D., M.P.H., IFMCP**

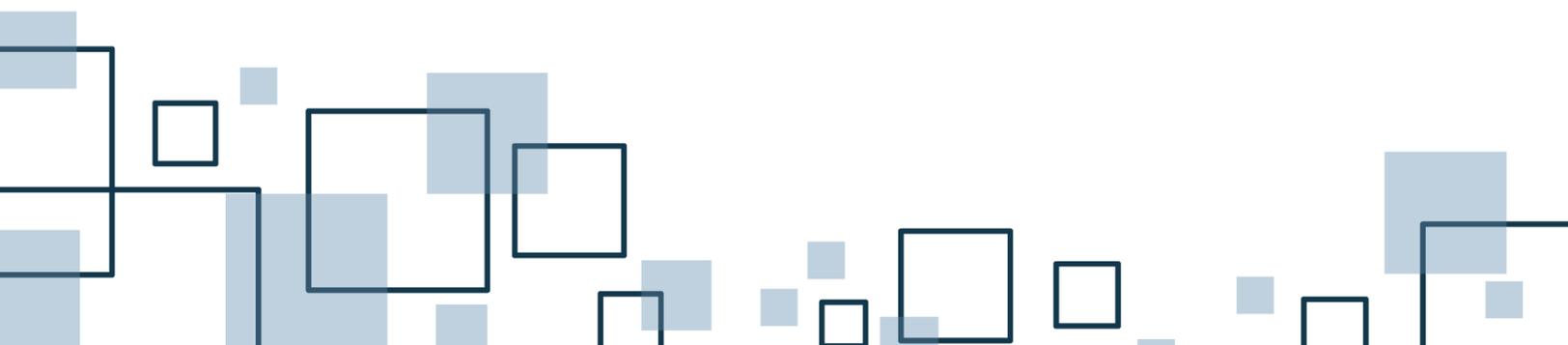
Thank you, Dr. Sandison. Pleasure to be here.

### **Heather Sandison, N.D.**

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 Dr. Bredesen's 100 patient, I wanna say clinical trial, but it's not a clinic, it wasn't a clinical trial. It's a case series.

### **Kenneth Sharlin, M.D., M.P.H., IFMCP**

Yeah. Case series, right.





**Heather Sandison, N.D.**

Of 100 patients and you were highly involved in that. And you also have trials or peer reviewed articles that have been published in the Journal of Alzheimer's & 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 wanna understand kinda how you marry all of this.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

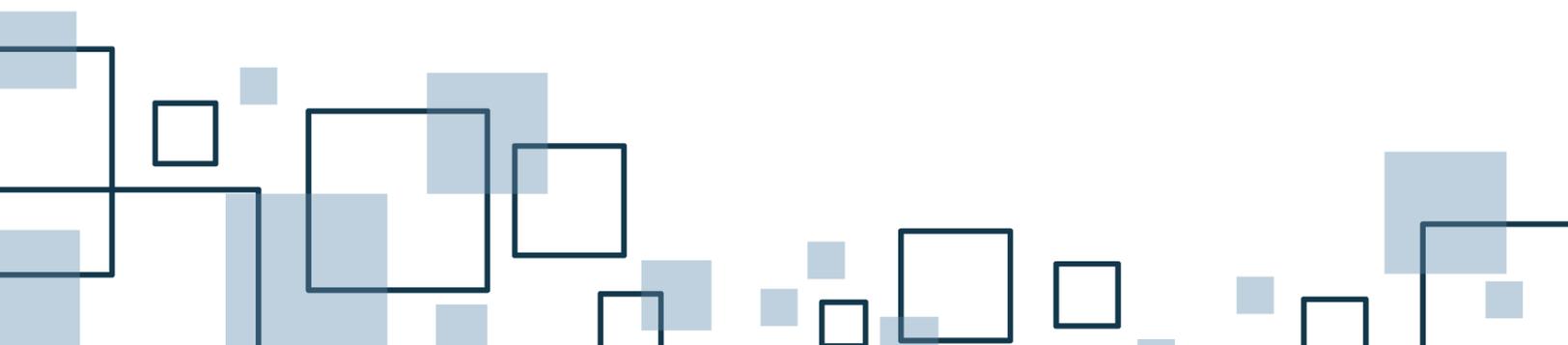
Yeah, I mean, it certainly can be a challenge. It's a challenge for both practitioners. And it's a challenge for those who are attracted to this particular approach, because it asks of our patients a very different type of engagement than, "Hey, I'm gonna write you a prescription and I'll see in six months." So in my clinic, Sharlin Health and Neurology, in Ozark, Missouri, we have a team-based approach that helps our patients. That includes a registered licensed dietician, health coach, what we call Sharlin 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 regular neurologist in the community, 'cause 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 a question, why is it we got sick and what do we need to do to get better?

**Heather Sandison, N.D.**

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. So many of my patients tell me the 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 gonna work that well, go see neuropsych and spend four hours in a super stressful environment, only to tell them, "Yeah, you have dementia." So how do you kind of think that neurologists should be doing this?

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

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 is called the natural history of disease. This is a standard history as might be collected in a good neurology office where it





might say, "Okay, Dr. Heather, first of all, tell me a little bit about what brought you in," and you say, "Well, I'm having trouble with my memory," right. And say okay, how long has this been going on? When did it start? How did it progress? In some cases, have you noticed certain things that actually make it better? 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 it'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.

**Heather Sandison, N.D.**

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 'cause I know this can be frustrating for family members to be like, "Why you don't realize you didn't remember telling me that five minutes ago, you don't realize that you're getting lost in familiar places?" And I'm kind of wondering like, is it denial? I feel like 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 the part of the brain that's affected or what's going on here? 'Cause other people are very, very aware of their decline.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

That's right. Well, I'll tell you. And 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 anosognosia. So for the listeners who wanna learn a little medical language, anosognosia sort of like, you don't know what you don't know. But stepping back from this a little bit and thinking about our Alzheimer's patients and even some of the things that they've told either myself or the health coach is that they really are, have to learn how to live in the moment. Their memory of an hour ago may not be there or a few days ago may not be there. In Alzheimer's disease specifically, and there are other forms of dementia, oftentimes those more remote hardwired memories are still fairly well-preserved at least for a while. But the nature of being 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 wanna think about yesterday. We don't wanna 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. Of course, eventually, many parts of the brain are





affected. All of the brain is affected, but we see these early changes in the limbic system of 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.

**Heather Sandison, N.D.**

Yeah, and then, what do we look for in a physical exam? So you were talking about there's this value and understanding of the story. There's also this value in doing a complete physical exam. Tell us what you're looking for there.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

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 thrown 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. 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, you know this funny thing, that's very characteristic of neurologists, 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 is 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, Dr. Heather, I'm gonna 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, how you put things together, like a complicated summit, right? All of the parts, how do those pieces come together.

**Heather Sandison, N.D.**

For a recipe.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

That's okay.

**Heather Sandison, N.D.**

How do you cook? This is, a lot of this, how do you do laundry, right?

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Right, yes.

**Heather Sandison, N.D.**

A lot of this is, how we function in the world, our activities of daily living that are more complicated than just going to the bathroom.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

100%. So how do you operate the microwave? Or how do you operate the, those are executive functioning, planning, language, attention, and concentration, orientation, knowing where you are, what day it is, what's the date, what's the time, et cetera. All of those are cognitive domains. So those are very important to go through when we're evaluating our patient's cognitive status. Because, for example, if delayed memory is entirely preserved, but executive functioning is affected, this may not be Alzheimer's disease. It might be 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 the-

**Heather Sandison, N.D.**

Tell me a little bit more about that. Why does it matter what we call it?

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Well, so that's an interesting question because I, we'll get into it now, I was hoping we get into it later, but okay. Because I find, and I'll offer my personal unique perspective that this is really, we're 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? If it's Alzheimer's disease, we have to demonstrate that there is a decline in at least two cognitive domains, one of which is memory, right.

Call that amnesic 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 Alzheimer's disease," right. And what does 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 a, 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 does functional medicine do? Functional medicine is patient-centered or person-centered. It's not disease-centered. So we strive to understand a different type of narrative. 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, unlike what happens in the typical office, you know, 10 minutes, you'll have a diagnosis and good luck, see you in six months, right? We take the time to really understand your life narrative because as Dr. Bredesen says, "There are 36 holes in the roof, at least," right? 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, 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 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.

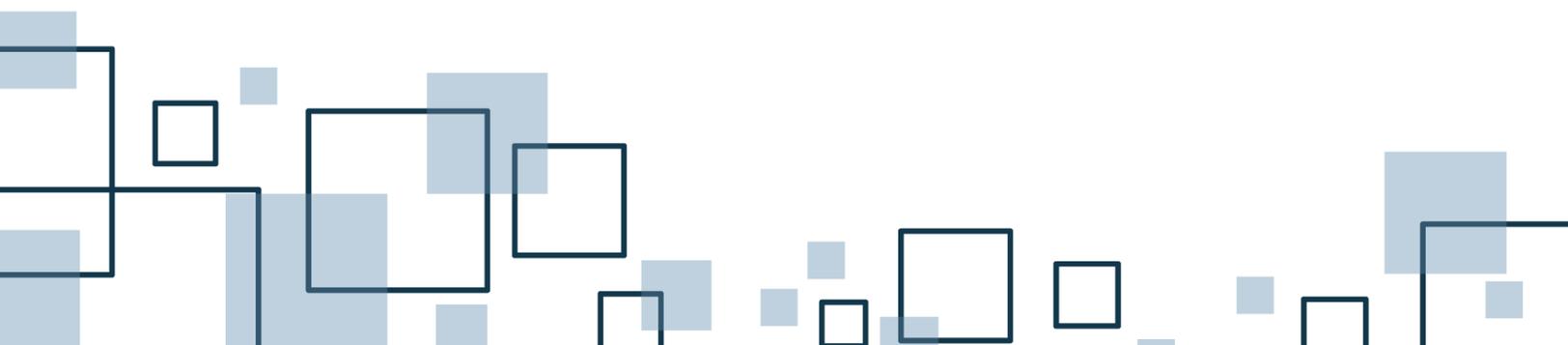
We have to understand that, we have to be prepared as practitioners to manage those dimensions and to offer if nothing else, reassurance to the patient and family that we recognize this as being very much part of that disease process. We, at the same time, I believe, have a moral obligation to work with 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 factors or a contributing factors to a lot of different diseases.

**Heather Sandison, N.D.**

So have you seen Alzheimer's be reversed in your practice?

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

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, but we're not. But 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 and 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 their people 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.





**Heather Sandison, N.D.**

Right. Let's talk about that. Right, because my understanding of the literature is that this beta amyloid plaque hypothesis is maybe helpful and potentially, really has been harmful because it derailed us down this kind of blind alley for so long as the assumed explanation for the pathophysiology for dementias and Alzheimer's is what they say, but more and more dementias kinda 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 tau 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 significance 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 wanna make sure that you also have that understanding of sort of the landscape of our thought process around Alzheimer's equaling beta amyloid plaques, that there's this big disconnect. So are you on the same page? Have you also understood that?

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

I agree mostly with what you're saying. Yes, I mean, I absolutely think that to some degree, we've been derailed by this amyloid hypothesis when we should be looking a lot deeper. As you know, from the work of many scientists, including Dr. Bredesen, including people like Rudy Tanzi up at Mass General at 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 does a lot of things, it's a chelating agent has, you know, Tanzi's 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 amyloids, say with monoclonal antibodies targeting the amyloid that tau protein levels will also improve. 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 the tree of causation.

**Heather Sandison, N.D.**

So how do we do that?

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

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 integrated. 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 the second protein that's very important. Because the accumulation of this other protein called tau is the protein that's specifically associated with the decrease in cognitive functioning. Cognitive functioning does not take a nose dive 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 that 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 play, 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 been numerous papers that have been published on this general topic and what the listeners and viewers 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 you





think of my dear friend, Dr. Terry Wahls, a little digression, because she has multiple sclerosis, but she has many people with MS who follow her and are very taken by her own hero's journey to reverse her multiple sclerosis and go from a tilt recline wheelchair to being a very dynamic, intelligent, successful individual who's now sharing her message, right?

**Heather Sandison, N.D.**

Yeah, and for listeners who are curious about hearing that first hand, she has interviewed on the summit so head on over to her talk.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

You'll definitely enjoy that. So at any rate, sometimes I have to remind my patients, you know, Dr. Wahls still has MS. She has MS, 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 MS, but MS 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. And we're never gonna make this better by taking a magic supplement, but if we do that, things improve.

**Heather Sandison, N.D.**

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 if this is a complex disease and we need a solution that appreciates and matches that complexity, 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.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Yes.





**Heather Sandison, N.D.**

And so, when we take this approach, this functional medicine approach, Dr. Bredesen's approach, and we start patching all these 36 holes, do you see that one of those holes is maybe more important or bigger?

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

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, "hey, do you take this? Do you take this? What do you recommend?" That kind of thing. I say, look, we utilize supplements because we do some deep dive testing and 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 gonna 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 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.

**Heather Sandison, N.D.**

Right, the supplements are supplemental.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Right, adjunct. Absolutely.

**Heather Sandison, N.D.**

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?





**Kenneth Sharlin, M.D., M.P.H., IFMCP**

I do wanna 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. 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 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.

**Heather Sandison, N.D.**

Well, yeah. This is why I created Marama.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Yes.

**Heather Sandison, N.D.**

Marama is a residential care facility here in San Diego, where we have an immersive experience in Dr. Bredesen's protocol. And at the moment, we're the only place in the world doing that and offering that. But my hope is that 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 says, "Hey, I want a place for my mom down the street. I can't send her to San Diego." We don't have space at Marama 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."

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Yes.

**Heather Sandison, N.D.**

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 have to respond. At that point, it's too late. There's no way we could do it if they're being fed cereal for breakfast and sandwiches for lunch and pasta for dinner and cake and cookies for dessert, and then parked in front of a TV all day.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Yes.

**Heather Sandison, N.D.**

It's just not going to work.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Not gonna 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 part of your daily staple is four Dr. Peppers a day. And I say, "Okay, we're gonna just get rid of all that. We're gonna put you on a ketogenic diet or whatever," you know? Well, that's a setup for failure as well. So we, you know, we use this term SMART goals, 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 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.

**Heather Sandison, N.D.**

And the why are you here, right?

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Yeah.





**Heather Sandison, N.D.**

You're not gonna do this because somebody tells you.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Right.

**Heather Sandison, N.D.**

But people are often driven by those really deeply emotional factors in their life that they wanna get on the ground and play with their grandchildren. They wanna be there when their grandchild graduates. They wanna be there when that next generation is born.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Yes.

**Heather Sandison, N.D.**

They wanna 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.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Absolutely. It's very, very important idea. And that's why it's, so prevention 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, processed foods, maybe dairy, there are other things that would broadly be considered inflammatory, but those are probably some of the bigger ones right there. And then we wanna look at the nutrient density of the diet because while there is a lot of banter and interest, for reasons that are very reasonable and scientifically based, say about a ketogenic diet, the risk of going immediately into that sort of diet is, if you are nutrient-depleted entering into this, engaging in this conversation, engaging in this process of change, the risk, not saying all in that, this isn't like, everything is the same, all ketogenic diets are the same. 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 micronutrients. 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 wanna go, we wanna 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.

**Heather Sandison, N.D.**

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 Dr. Bredesen's books. She's listened to the summit, but her brother, who's also playing a role says, "No, no, we need to listen to the neurologist. 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 wanna have a cocktail with her at five o'clock when I get to go see her." And dad is still around and he's listening to both daughter and son and they're arguing amongst each other. I'll 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 the literature, the less amount of time people can deny that this is actually something that can happen. But what do you say in that kind of dynamic, that family dynamic?

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

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 MS 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 is better because no matter what happens in the office, the real healing happens at home. And if somebody says, "You may be eating kale and grass fed beef, but I'm going to McDonald's," and bringing it home and eating it right in front of you, that is never gonna work, never gonna work. So we do try to get everyone on board. Again, is this for absolutely everyone? Yeah, not most ideal perfect world it is. But realistically, it probably isn't because not everybody is ready for change, or there are family members who can't, or what I





sometimes see is that educated adult child who's 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 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. There's a whole other discussion and, you know, and it becomes too much. In our office, my wife, Valerie is just, is such a critical team member. 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.

**Heather Sandison, N.D.**

It's totally necessary. And it is just part of the reality of treating patients who have cognitive decline is that it takes a village, right? They're almost like children again, and it's gonna take support and all getting on the same page. And 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 Bredesen 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. And there are things that are worth it. And it's a lot less hard. It's a lot less money there. It's a lot less cumbersome when we start early, when a patient is younger.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Yes.

**Heather Sandison, N.D.**

And they're 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 easier when it's early and that these are the steps you take.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Yes-





**Heather Sandison, N.D.**

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

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

It does start with that basic history. So we have to find out what is their sleep like? Are they a snorer? Do they have a diagnosis of sleep apnea? This issue of sleep apnea when people stop breathing in their sleep either 'cause their brain fails to send the signal to their diaphragm or because their upper airway closes off, is a major risk factor for dementia, including Alzheimer's, heart attack, stroke, et cetera. It definitely shortens life. We have to work on sleep. Even when there are other factors interfering with sleep, like, sort of stressors that kind of keep us up at night or wake us up at three o'clock in the morning. We do have to work on that. 'Cause I always say that sleep is more than a time of rest. And among the many things that occurred during sleep is memory consolidation. So it is critical that we get that seven or eight hours of restorative sleep and stay on the same schedule and not use things like Benadryl to sleep, those over the counter sleep aids that actually block the chemical involved with memory called acetylcholine or alcohol, which fragments 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 it's-

**Heather Sandison, N.D.**

And know-

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Yeah.

**Heather Sandison, N.D.**

I'd love to hear your thoughts on benzodiazepines for sleep.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Yeah, well of course, they're habit forming and they lead to a problem called tachyphylaxis, 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 Alzheimer's diseases.

**Heather Sandison, N.D.**

And so these, these are medications like Ambien and Xanax, very commonly prescribed medications for sleep. And so being aware that this could be contributing to your cognitive decline if you're taking them and there are alternatives to this that can help actually support brain function.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

100%. So we definitely have to work on sleep and 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 breath, for our breathing, right? 'Cause we breathe through the lungs and extract oxygen. It 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 an 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, watching TV, as you said, right? Even having those standing work stations 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 those CrossFit style, high intensity interval training routines. But what we try to do in Sharlin 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, two rights in a left or whatever, right? And it can get increasingly complicated beyond that. But that's a simple example. We certainly wanna 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, affect all the systems that we talk about in functional medicine or mitochondria or on our immune system, in our detoxing, and all of those things, right? So we do





have to work on that. In our practice, a big component of that is the HeartMath Tool. We use the inner balance from HeartMath. We have lots and lots of data on the use of HeartMath in cognitive decline. So it's a very, very helpful-

**Heather Sandison, N.D.**

And that is a biofeedback system.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

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 an APOE4 4. 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. It goes from 0 to 30, where 26 to 30 is normal. She's probably hovered in this sort of 22, 23 range for several years now. And she's a 4 4, and she's actually about 80 years old, which, by that time, at 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 three or four times per week and three or four 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 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.

**Heather Sandison, N.D.**

It's just as another data point at Marama. 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 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, a 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, 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 10 days that they were isolated from each other, we saw falls go up. We had three falls in 10 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 facility getting COVID, but the ramifications of isolation were profound and it took about 10 weeks after 10 days of isolation from each other, peer group only, it took about 10 weeks for everyone to get back to baseline.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Oh. It's devastating.

**Heather Sandison, N.D.**

It really was. And then when I think about the magnitude of isolation during COVID over the past two years, of course, we don't want anyone dying from COVID. We took the COVID very seriously. And yet there are these side effects of the intervention of reducing, of flattening that curve.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

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 there 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 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, 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 practice 'cause 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 aducanumab. We're studying another one called donanemab. We have access to aducanumab. 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 patients.

**Heather Sandison, N.D.**

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.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Right.

**Heather Sandison, N.D.**

And if we could get into that then is there potential to get even more cognitive function back?

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Yes.

**Heather Sandison, N.D.**

And I think that one of the dangers and one of the sort of habits we've seen in this beta amyloid plaque hypothesis alley is that the primary outcome measure is how much beta amyloid plaque is there when really what we care about, like 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 we wouldn't, I wouldn't have invited you on here if-

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Well, it is still the, so that does get into some of the how the accelerated approval of Aduhelm or aducanumab came about. But it's absolutely true. The primary outcome measures are cognitive decline or, have we changed cognitive decline, you 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 patient's cognitive functioning. It is absolutely true.

**Heather Sandison, N.D.**

There's exactly a toolbox that was designed for exactly this kind of thing.





**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Yes.

**Heather Sandison, N.D.**

Because cognitive function, dementias and Alzheimer's are such a massive societal problem, right?

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Right.

**Heather Sandison, N.D.**

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 we are, it's coming for us.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Yes.

**Heather Sandison, N.D.**

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

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Right.

**Heather Sandison, N.D.**

In the clinical trial we did in my office, we used 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, we 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.





**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Yes.

**Heather Sandison, N.D.**

Very easy on this 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."

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Right, right.

**Heather Sandison, N.D.**

But the battery of test on a scientific side, on a clinical trial side, help give us more nuance, more understanding of what's going on.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Yes, and we need to screen for behavioral changes and instrumental activities of daily living as well. So there's something called the NPIC and there are varied activities of daily living fields. 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 demonstration of what we call biomarkers or amyloid plaque and tau protein in the brain. In other words, it used to be two or three decades ago that we would send our patients for those painful, as you've put it, neuropsychological tests that last four to eight hours. And I don't know about you. I don't have Alzheimer's disease, knock on wood, but 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 am 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 and tau PET scan is really not there. The proclivity, there are Precivity 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.





**Heather Sandison, N.D.**

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

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Well-

**Heather Sandison, N.D.**

I guess if you're using Aduhelm or if you're using that type of intervention, then there would be a decision right there.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Oh, it would be- It would be remarkably different, potentially. Especially if we're using those monoclonal antibodies or other therapeutics.

**Heather Sandison, N.D.**

Yeah.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

There's not a single person who can go into any of our clinical trials without biomarker confirmed disease. But we have patients who refer to us all the time, who either 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. It 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 cost suppressant for the cold, that we shouldn't be 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 patients. Ultimately, as human beings, our brains seek truth and understanding. Our brains seek the narrative that helps us explain our experience and the world around us. And making that diagnosis, even when we don't have good treatments is the first step in that journey that they say, "Thank you. I knew something was wrong with my brain." It's not the best news, but then our obligation as more holistic providers is to give our patients hope.





**Heather Sandison, N.D.**

Yeah. And the best treatments available. I wanna make sure that all of our listeners know how to find out more about your center in Missouri and also all of the things that you, your books. I know so many people are gonna be inspired to learn more about what you have to offer.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Thank you. Best way to learn about us, and we are on Facebook and LinkedIn and 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 [functionalmedicine.doctor](http://functionalmedicine.doctor). And it's just spelled out [functionalmedicine.D-O-C-T-O-R](http://functionalmedicine.D-O-C-T-O-R), that's our website. And there is 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.

**Heather Sandison, N.D.**

Dr. Sharlin, thank you so much for joining us. It's been a pleasure. I knew this was gonna be a great conversation the moment that we were introduced to each other.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Thank you.

**Heather Sandison, N.D.**

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.

**Kenneth Sharlin, M.D., M.P.H., IFMCP**

Thank you, appreciate it.

