



Top Takeaways: #299 How to Save Your Brain, Improve Its Function, and The Thyroid's Involvement In Mitochondria Size and Number with Dr. Kelly Miller

1. After Dr. Kelly's fourth book "Saving The Brain" was published, he shifted to a brain based practice where patients he evaluates, no matter their symptoms, are analyzed from the brain down.
2. Chronic stress can slow of the left side of the brain, causing a left right brain imbalance that can lead to anxiety and depression.
3. There is currently a high level of brain related issues from exposure to heavy metals, EMF, and environmental toxins.
4. Aluminum, mercury, glyphosate, and many other harmful toxins are affecting the bodies ability to absorb essential nutrients, destroying the gut biome, affecting thyroid function, and increasing risk of Alzheimer's
5. Because 95% of our body's serotonin is produced in the gut, ingested glyphosate can reduce the body's ability to make this essential chemical for brain function.
6. A child born from a mother with thyroid problems or with a low amounts of small mitochondria will also have low numbers of small mitochondria.
7. A well functioning thyroid is essential for proper brain function, as the thyroid determines the number and size of mitochondria in the body, which produce energy for the brain and body.
8. Many people need to clean their thyroid receptor sites with nutrients, in order to absorb thyroid hormones.
9. Improving mitochondrial function, drinking adequate amounts of clean water, and taking in more fatty acids are some of the best ways to improve brain function and keep the brain healthy.
10. Dr. Kelly uses an audio-visual-trainer called Brain Tap that helps stimulate the brain through response to light and sound, with photic stimulation through the eyes, binaural beats, holosynk, infrared light therapy on acupuncture points, and visual voice guidance, in order to improve brain function.
11. Dr. Miller's book *Saving the Brain* is an acronym for ways to improve brain function. Sleep, autonomic balance, vitamins, minerals, and antioxidants, reducing infections and inflammations, neural homes, addressing genetic issues, your belief system in tackling stress in a positive way, addressing obesity and oxidative stress, reading important information, improving blood flow, repetitive head injury, activity and exercise, insulin

- sensitivity, and neural transmitters.
12. When Dr. Kelly experienced a decline in brain function, he began looking at all the research out there that would help improve cognitive function, which prompted him to write his book *Saving The Brain*
 13. You can find *Saving the Brain* on Amazon.
 14. You can learn more about Dr. Kelly Miller and book a consultation with him at www.drkellymiller.com/
 15. You can learn about Dr. Miller's brain function testing and therapies, and his locations at www.savingyourbrain.com

Wendy Myers:

Hello everyone. My name is Wendy Myers. Welcome to the Myers Detox Podcast, where we talk about everything related to heavy metal detox, supplements, protocols and all things under the sun related to alternative health. I want to help you find answers to your health issues and actually address the underlying root cause.

Today we have Dr. Kelly Miller on the show. He is an absolutely brilliant naturopath, and doctor and chiropractor that has a brain clinic. He has three locations actually, and he helps to save people's brains and dramatically improve their brain functioning in so many different ways. Today we're going to be talking about how to save your brain and its function, and the thyroid's involvement in the number of mitochondria that you have, and their size. Really, really interesting thing we'll be learning today on the show. We'll be talking about how metals exactly impair brain function, metals like mercury and aluminum, and how they cause the production of beta amyloid plaques that can lead to dementia, like Alzheimer's.

We'll talk about the 15 things that can impact brain function that can be evaluated and improved. The latest technologies to dramatically restore brain function and memory, and supplements as well, and Dr. Miller's top tips to improve brain function that you can do at home. I know so many of you guys listening today are concerned about heavy metals, concerned about the impact of environmental toxins on your health and are curious in what to do about that, what works, what doesn't.

Well, I created a quiz to help you evaluate some lifestyle factors that can be contributing to your heavy metal toxicity and body burden of metals. Go to heavymetalsquiz.com, take the quiz, it takes a couple of minute and you'll get some information on your level of heavy metal toxicity potentially and the next steps, a free video series on what you can do to reduce your body's body burden of heavy metals. Heavymetalsquiz.com.

Our guest today, Dr. Kelly Miller, is a DC, Doctor of Chiropractic and MD, FASA, and he's received a Doctor of Chiropractic from the Logan University of Health Sciences in 1980, and he received his Certification in Industrial and Occupational Health from Northwestern College of Chiropractic, and a Certification in Acupuncture and Meridian Therapy.

He became a Fellow of Acupuncture Society of America and became a board-certified naturopathic physician from the American Naturopathic Medical Certification and Accreditation Board in 2001.

He's all board-certified in acupuncture, and he's a Fellow of the Brazil American Academy for Aging and Regenerative Medicine, and became certified in Functional Diagnostic Medicine from the Functional Medicine University in 2014. Dr. Kelly Miller is an international lecturer and he's the author of seven books, including 13 Secrets to Optimal Aging, Micronutrient Testing, Is Your Environment Stressing You Out? Yes I it is, thank you very much, and Saving Your Brain: Causes, Prevention and Reversal of Dementia and Alzheimer's. You can find Dr. Miller at DrKellyMiller.com and SavingYourBrain.com.

Dr. Miller, thank you so much for joining us on the show.

Dr.Kelly Miller: Thank you for having me.

Wendy Myers: Tell us a little about your background and your medical practice and how you work with patients.

Dr.Kelly Miller: Sure. I've started in chiropractic, I've been in practice for 39 years. I'm a chiropractor, certified in acupuncture, certified naturopathic physician, I have a Fellowship at Aging Regenerative Medicine, and then also certified functional medicine. After my fourth book was published, Saving Your Brain, I've shifted to a brain-based practice now, so all the patients that we evaluate no matter what their symptoms, we look at the analysis starting from the brain down. So they may come in, even if it's a chronic pain patient. But we're looking at different brainwave patterns, we do something called brain mapping, which measures the five different types of brainwaves. We have the slowest is delta, then you have theta, then you have alpha, which is kind of the idling speed of our brain, then we have low beta, then we have high beta.

High beta is like high alert, like incoming aircraft, we've got mortar fire, machine gun, and that's we find a lot of patients, that's where their brain is when they come in. We look at that and when there's a high or a low of a different brainwave, it's characteristic of certain neurobehaviors, and it can cause one of the biggest things, for example, when we have a shift between the left and right brain is that we have an anxiousness, and an anxiousness can cause depression. In one of our favorite subjects we're talking about the fight, flight, the sympathetic response.

Well, for anxious, what do we create? We create that sympathetic fight-flight. So by balancing the brain, left and right, getting it back in sync, then it makes that shift. Now, one of the things that's interesting that I find is that it doesn't matter ... We were talking about stress earlier, it doesn't matter what the stress is, but if that stress becomes chronic it causes a slowing of the left side of the brain, okay?

Wendy Myers: Interesting.

Dr.Kelly Miller: So it's already causing that, so it starts to create that anxiousness and depression, so it's one of the reason that anxiousness is so prevalent in our society now, because everybody's got this left-right brain imbalance from the chronic stress.

Wendy Myers: Yeah, and so why does there seem to be such an epidemic of brain problems in the world today?

Dr.Kelly Miller: Well, good question. I mean, I think a lot of the work that you've done touches on that. We have a lot of unfriendly chemicals in our environment, heavy metals, particularly mercury and aluminum. I'm in Tampa, and Tampa and Miami area are the highest aluminum concentrations in the United States. What people don't realize is you can't get rid of aluminum, it's in the air, it's in the water, it's going to accumulate and your brain takes mercury and aluminum up to the brain, it's a neurotoxin, that's where it's stored. And an interesting property of a beta, we talk about a beta plaquing is associated with Alzheimer's. Well, one of the functions of a beta is it's a heavy metal binder. Doesn't it make sense if our body's trying to survive that we're going to produce this beta to bind with the mercury, bind with the aluminum and attempt to try to get out of the body.

The problem is we don't have enough of the good vitamins and minerals, antioxidants to take it through delivering and get rid of it, or sweat it out or however we could do. A lot of emotional stress, there's a lot of environmental stressors. I mean, I think that's the biggest thing I see being in practice 39 years of just there's so many more environmental stressors.

Wendy Myers: Yes. And we have EMF, which is not helping people's brain functions, and then there's also, you mentioned nutritional stress, and just so many stressors today affecting our bodies and our brain functioning. Can you talk about EMF a little bit?

Dr.Kelly Miller: Yeah, I have a chapter in my book on EMF and a good book for people that haven't read is Radiation Nation, it's one of the references there. Have you read that book?

Wendy Myers: No, I haven't. I have it in my library, I haven't read it yet though.

Dr.Kelly Miller: It's a good book. But there's just so much information it's overwhelming that you can't refute it. I mean, I know there's people that say even though that Kilimanjaro is melting right before your eyes that the planet's not heating up, that EMFs do not create a problem. But if you look in many European countries are banning it, public WiFi, they're banning it out of the school and I'm not trying to get paranoid about it, but people need to be aware that there's things. There's people walking around with the things in both ears all the time with the WiFi with their talking. They're

frying their brain. When you go to 5G, that will go all the way through your head. You're going to see a lot more problems.

When I'm on a cellphone now I use speakerphone and I don't use Bluetooth, try not to avoid that, just being aware of where the router is. You wouldn't want the router where that lamp is behind you, so that would be a bad thing. Put the router far away as you can and just turn all this stuff off at night. Turn your electronics, but the problem is, is you've got teenagers and they'll have their cellphone and they will sleep with this, they'll sleep on their pillow and sit there all the time, and they're just constantly getting inundated. Plus it's good just to leave your ... I mean, these things we need, it's not like we're not going to use a cellphone but we need to have a time out from them. There's lots of-

Wendy Myers: Digital detox.

Dr.Kelly Miller: Yes, for sure. I mean, people first thing in the morning, and it creates anxiousness. They're like, "Oh." Like the people checking their emails, they can get a little bit carried away with that.

Wendy Myers: It's almost part of waking up where you need that little cortisol rush to turn your brain on and get going.

Dr.Kelly Miller: Yeah, well that will do that.

Wendy Myers: And so, let's talk a little bit about environmental toxins, a little bit more in-depth that cause brain impairment and that need to be eliminated.

Dr.Kelly Miller: Sure. A lot of these are coming through our water source, but we talked aluminum a little bit, it can be in the water, it can be in the ... Antiperspirants often have aluminum, just cooking in aluminum, foil, aluminum pans, there's different ... We just need to be aware of that. There's aluminum vaccines. We're still getting mercury. If you're an old guy like me, 63, I had like 20 fillings that were all mercury, so I've chosen not to take them out. I take something on to constantly try to keep it out from causing harm.

But a lot of stuff's in the water now. We have the GMO, the Roundup, glyphosates, very bad. Very, very bad. They destroy all your good bacteria in your gut, they facilitate bad bacteria, fungus to grow, yeast to grow in your gut, they inhibit good minerals like potassium, magnesium, selenium, zinc from being absorbed, and they increase the absorption of heavy metals. It's bad stuff and it's-

Wendy Myers: I can't imagine a worse poison with all the different things it does. It's hard to imagine something that does more damage to your body than glyphosate.

Dr.Kelly Miller: Yeah, it's one of the worst poisons that we've created, and that's just greed, and that's just ... There comes a point ... I don't want to get up on a

political agenda here, but there has to be able to come a point when we have to realize that there's certain things that are literally poisoning us and killing us and horribly affecting our children, and aging population and we have to put our foot down and we have to make people be accountable for these things and stop it. But it's very bad, so the glyphosates ... You have to especially, like I'm in Florida, it's such a shallow aquifer and you have so much agriculture when you're in this. These things are coming into our groundwater and they're not being checked, so we will organo-phosphates just from the herbicides and pesticides, huge abundance on test patients and got huge body burden of this. The plastics, all these things, they're bad for the brain, they cause inflammation, they're endocrine disruptors. A lot of these things are affecting our thyroid, when we have a low functioning thyroid that doubles our risk for Alzheimer's.

A lot of these multiple layered, they're toxic to the nervous system, their brain and the peripheral nervous system and the endocrine system.

Wendy Myers: How does glyphosate impact the brain?

Dr. Kelly Miller: Well, you've got the gut-brain connection, so when you have ... Like I said, 95% of our serotonin, which is a calming neurotransmitter, is produced in our gut. So when we have a disruption of the normal flora which is beneficial, it's a symbiotic relationship. There's all these microorganisms in our body are for our benefit, they're for us to help them. And when we get a shift in that and we the too many bad guys, then it affects the brain.

One of the things we see like in an elderly patient, for example, and I'm not trying to say negativeness against antibiotics or anything, but when we get an elderly patient and we'll take an antibiotic round for 10 days to three weeks, you will see Alzheimer's-like symptomatology in these people. I mean, they have tremendous brain fog, they have concentration problems. When we do heart rate variability it takes peoples about six weeks if they take an antibiotic for their nervous system to recover. So that we're talking about the brain and the nervous system, the autonomic nervous system, and the interesting thing is, is when we take an antibiotic, we're three times more likely to get another infection within six weeks. It's necessary in some cases, but there's a lot of natural things that we can do to avoid that.

But the antibiotics don't work. A lot of the drugs that don't work the same way they did, like the diabetes drugs. The ones they use now are much more potentially bad side effects, very detrimental. So antibiotics are, again, very complicated medications with lots of potential side effects.

Wendy Myers: And our brain uses a lot of energy, uses about 20% of the energy that our body produces, roughly, and the brain's not going to function well if your mitochondria are not able to produce enough energy. You've said in one of our conversations that the thyroid determines mitochondria's size and

number, which is really, really interesting. Can you elaborate on this, and how thyroid function impacts brain function in this way?

Dr.Kelly Miller: Sure. If we think about our thyroid, when we're conceived all the mitochondria comes from mom. You've got three million mitochondria in that ovum, in that egg, and we've only got about maybe in 10s from dad. So really from-

Wendy Myers: Thanks Dad.

Dr.Kelly Miller: Yeah. From our conception the health of your thyroid, of your mother at the time you're conceived is vitally important to how you're going to respond. If your mom was hypothyroid, you're probably going to be hypofunction. Now, we don't see it to the level of retardation or something to that, but it has a bad effect. So low functioning thyroid doubles the risk for Alzheimer's. It's very important because it's very cell, mitochondria, the thyroid determines the size and the number, so if you have a higher functioning thyroid, you're going to have more and bigger mitochondria.

When we talk about going to back to the stress, is one of the things that happen when we get stressed, we go through this change of autonomic imbalance to fight-flight, which we were talking about, which then creates a hormonal imbalance. Because what are we doing? We're producing adrenaline and cortisol, okay? When we produce cortisol we start shunting all the hormone into there and the anabolic hormones like DHEA and estrogen and testosterone are being diminished, so stress creates hormone deficiency over time, imbalance.

When we have this stress we're eating up more micronutrients to try to deal with this stress. We eat a lot of Bs and Cs from adrenalin response, just that, but all these environmental things we've got to counteract it. But all these things make our blood thick, they go down to the next thing, it affects our microbiome and it affects our gut, we get leaky gut. Then the last thing we do is what it does, it starts damaging the messenger RNA or mitochondrial. They're very susceptible to stress. Now we have mitochondria not reproducing appropriately, so this mitochondria is not as efficient as mom was, and now this one we're getting a degeneration of the mitochondria.

So mitochondrial DNA is much more easily damaged than our whole genetic DNA, so we can get mutation, we can get a problem with that. But looking at the big picture is we look at thyroid as a big function to help the energy in the body.

Wendy Myers: And can taking thyroid medication help to ameliorate these issues or correct the impact on mitochondria functioning? Is that enough?

Dr.Kelly Miller: Well, if we're looking at medication, we're looking at usually the most things that people take is a synthetic form of T4 in the form of Synthroid or levothyroxine. What we have to do for that, and this I something our

thyroid produces, but it has to ... In you liver it's converted to something called T3, which is the bioactive form, and it just takes off an iodine atom. But that's what every cell needs, so lots of times half the people who are taking a Synthroid or levothyroxine still have the same symptoms they had because they're not converting it, or they're developing receptor resistance.

This is something that's very becoming more common. We're very familiar with what we call insulin resistance, and that's when we have enough insulin, or sometimes even more, above average, but the insulin can't get into the cell, and so if the insulin can't get into the cell it won't allow the glucose to come in, and that's why we have high sugars. What we're finding now is we're having a lot of our hormones, we're getting this receptor cell resistance, so the thyroid is sitting in the bloodstream, but it's not getting inside the cell where we need it.

The medication doesn't work, there are other nutrients you can take that will kind of clean the cell receptors, and that's a lot of patients we do with that, we just to get rid of the cell receptor resistance and then they get the thyroid itself.

Wendy Myers:

What are some of the nutrients that helped to clean the thyroid receptors sites to make them the more receptive to thyroid hormone? Because so many people are on thyroid medication and, I don't know about you, but a lot of my client populations takes thyroid medication and they don't get the results that they want, they don't improvement in the symptoms. How can we improve our body's ability to actual utilize a thyroid hormone people are making and taking?

Dr.Kelly Miller:

Yeah, well sometimes we need some specific nutrients like tyrosine and selenium and different things to help convert that into T2. But, what we find now, is a lot of what I'm seeing it is a lot of thyroid receptor resistance, so one of my friends, mentors, developed this product. I wish I had invented it, but it is called Power Charge. But routinely when I'll have someone who's functioning in the low range and they're taking medication, if we give them this their levels come up in lots of times just with doing this they can off their medications because they go from a hypo when they're taking medication, to a hyper state of thyroid function.

It's when we look at their blood levels there's adequacy there, but it's just not getting inside the cell. What we don't realize is that what that nutrient, whether it's a thyroid hormone or it's B12 or whatever, it's swimming around in the blood, but we have this receptor that it has to pass through to get inside, and that's why we're having a lot of cellular receptor resistance. This is a great product to fix that.

Wendy Myers:

And it's not just with thyroid, it's also our sex hormones, and stress hormones and other hormones as well. What is in the Power Charge?

Dr.Kelly Miller: I have to put my glasses on. It's got some cat's claw, fulvic cumate, thyroidium C3, which is a homeopathic, so it's just a combination of herbs, minerals and a homeopathic that helps clean the receptors. One of the things, there's a South American herb that helps clean the hypothalamus, so we have a lot of receptor resistance at the hypothalamus for different things as well.

Wendy Myers: Let's talk a little bit about the thyroid and the fact that if your mother had low thyroid function and when you're born, you then have less mitochondria than you would if you mother's thyroid is functioning properly, and how that impacts you throughout your life. Can this be corrected? Can you increase mitochondria production, increase mitochondria replication?

Dr.Kelly Miller: I think you can. I think there's very few things that the body can't compensate for it's given the right information. Our body's designed to be survive, to do the best it can in the circumstances. I think in what I look at is, what do we need to do to create a tipping point for this patient? What are the factors, what are the stressors that are creating the problem and what do need to do so that we get that correction to start? Because the body wants to survive, it wants to do that. We just have to create an optimal function.

There's a lot of things we can do for the thyroid nutrient-wise, and also just reducing a lot of these stressors, really improving your air and water is big. A lot of things are coming through our water source, our endocrine disruptors, and we see in the aging process we see more and more low thyroid function occurring as we age.

Wendy Myers: And we love mitochondria also as we age. Our mitochondria begin to die off and we have fewer of them as well.

Dr.Kelly Miller: Right, yeah. Again, it's looking at what can we do to clean up the environment? What can we do from a nutritional standpoint? What do we look at when we look at mitochondria, there's some limiting factors. When we eat food, our protein and our carbohydrate is converted into glucose. A lot of people don't think, "I'm low carbohydrate." It doesn't matter. You could eat too much protein, you're still going to produce sugar. When we have any fat, then it turns into fatty acid. So when we get to the mitochondria, if we don't have enough carnitine, we can't convert those fatty acids, we can't dump them into the mitochondrial energy chain. When we get into the mitochondria we have all these reactions that have to do before we get something called ATP, which is our cellular energy.

There's four B vitamins and alpha-lipoic acid is the limiting factor for glucose, so when we get into the mitochondria if we're deficient in some of those things and we can't even get in there to make energy. Then once we're within that, there's all these different micronutrients that are need. One of the things we look at for mitochondrial, we'll do like a micronutrient testing or something because we want to see these critical factors, what

we're deficient in, so we can make mitochondrial energy and that's, in every one of my books, is a recurring theme that we have to have the right things to make energy for their mitochondria, those things. Then we also have to have, when we have a problem, to be tissue-specific.

We're trying to heal part of the body. Different tissues have different need for different nutrients.

Wendy Myers: And so, regarding our brains, what kind of things can we do to protect our brains and nerves from brains, and improve its functioning? Of course, we want to improve our mitochondrial functioning because that will help to improve brain functioning, but what are some of the other things that we can do?

Dr.Kelly Miller: Well, just pure water. Our brain is 80% water in wet weight. In dry weight, it's 80% fat, so just getting a pure water source, being well-hydrated is very important in your brain function, and also having universally when I test patients, everybody is deficient in fatty acids. We're not getting enough fatty acids. Most of my patients need three plus grams of Omegas, and most of that's DHA. So in the Omega-3 complex there's something called EPA and there's DHA, which stand for a longer word, a big, long word. But most of the formulas are high in EPA, proportions of EPA, and that's good for maybe your knees and your hips, reduce inflammation. But your brain needs lots of DHA.

Pure water source is very important. We recommend people, especially in municipalities, to get a water filter that has something called a 401 certification, and through NSF, which is the international body, and that basically gets rid of herbicides, pesticides, arsenic, and even pharmaceutical drugs. Pure water source, then we want to get more fatty acids in the brain. Very neuro-protective, the cell membranes. Those are two big things. Just having adequate fatty acids reduces your risk for Alzheimer's by 50%

Wendy Myers: What are your thoughts on DHA supplements, fish oils versus just eating fish?

Dr.Kelly Miller: Well, you'd have to eat a lot of fish.

Wendy Myers: What if you really like fish?

Dr.Kelly Miller: Well, the problem with that, and I recommend ocean fish, the problem is the fish have Mercury, so the bigger the fish in the food chain, the more the mercury's accumulating. There's a happy balance between eating there. I think, unfortunately, even I think we're at a point were most of us need to supplement even if we're eating an organic diet. We do other types of supplements, like we do greens, we'll have organic fruits and vegetables that are dehydrated that we can supplement whole food. But I think for most of us we need to be at that ratio.

And we look for they get below the two to one ratio of Omegas three to six, and that's what they looked at. They think a paleo diet of romaine and eating a combination of things, and we have to remember that when I was a child that cows fed on grass and those grass-fed cows had Omegas in them, the meat had Omegas. And today you have to watch about fish, is it farm-raised? Because they're not going to have the Omegas, the farm-raised fish. They're going to be very high in arachidonic acid, which is going to be very inflammatory because they're being fed an unnatural diet.

Wendy Myers: So they don't count? Farm-raised fish don't count, nutritionally?

Dr.Kelly Miller: No, they're very bad for you.

Wendy Myers: In your clinic you focus on improving brain functioning and you use a lot of different modalities, you've tested countless modalities over your almost 40 years in practice. What are some of the newest technologies that you're using to help improve people's brains and the cognitive function?

Dr.Kelly Miller: There's several. One of the things I'm wearing right now is a headset. This is called an audio-visual trainer, and there's probably four major player in the world that produce these devices. We happened to use this, like a company called Brain Tap. Been working with them a number of years, but this has five different technologies. And what we know about the brain, is the brain will respond to light and sound, so this has photic stimulation through the eyes, and it also has binaural beats, it has holosync, it also treats acupuncture points with infrared light therapy, and it also has a visual voice guidance.

What we're able to do with specific frequencies is we can change the brain. Consistently when use this and we use some nutrition, in 60 days we can get a 30% neuroplasty change towards normalization in the brain, just in 60 days. That's with a 20-year-old, that's with an 80-year-old, if they'll do this. We do a number of other different technologies, and there's a chapter in the book about the audio-visual trainer. We also use infrared light therapy. We know infrared light does two things, that it stimulates nitric oxide. Nitric oxide dilates our blood vessels, so we want to get our blood vessels bigger in our brain so we get more blood flow. And it also stimulates mitochondria activity.

Infrared, with the diodes and lasers, it's able to penetrate deep through the tissue and can activate the mitochondria. That's the emergence of you see so much infrared and laser therapy out there, because we're actually activating mitochondria. The mitochondria do everything that the cell needs to repair and duplicate, so you're just accelerating that process. With that, what do we need we just talked about earlier? We need to make sure we have the proper nutrition for the mitochondria to work. Because if I hit it with the light and it runs out of magnesium, or it runs out of B1 or whatever, or Co Q10, then it can only do so much function.

So we always look at tissue-specific, so when we're looking the brain we're looking at things like we talked about. Omega 3s, we're looking at phosphatidylserine, phosphatidylcholine, these are all the important nutrients in the brain. And then whatever the brain needs for increasing circulation, ginkgo biloba, different things to help with the brain activity, the mitochondrial energy.

Also, electromagnetic frequency unclumps the blood. So there used to be ... You've probably seen something, or maybe the people listening have heard of something called dark field microscopy, and this is where we look at this clumping of the blood. What happens if we're clumping the blood then that's a stress reaction, so think about that. This is survival.

In the old days, when were in survival mode, that's because there was some critter that was going to try to eat us, right? So it makes sense that our blood would get thick, so if we got bitten or we got raked we might not bleed out, right? What's happening today though, all these other stressors that we've talked about, emotional stressors, environmental stressors cause our blood to get thick, so everybody's walking around with thick blood. We're not getting good circulation to our periphery, to our brain. So the PMF unclumps the blood.

Then we'll use combination therapies like we talked, like the head harness, so we can get the blood unclumped and then we are going to dilate the blood and get the mitochondrial energy in the brain. The other thing PMF does is it increases the uptake of nutrition to the cell membrane and to the cell, okay, which we talked about receptor resistance. The other thing it does, it helps get rid of cellular toxicity to facilitate it to get out of the cell. We like PMF a lot. We see good changes with that, so those are things.

And, of course, the nutrition we talked about for mitochondrial energy, we look at hormone therapy, particularly in the aging brain as our hormones drop, it's very important that we get them up regulated in some way because those affect the neurotransmitters, like this frontal cortex which is our decision-making. For women, that's estrogen. For men, that's testosterone, so if those levels really get down, your brain just isn't working as well and you're losing confidence, you're losing deductive reasoning, you're losing the ability to do routine things like manage your budget, just different things like that.

Wendy Myers: Are you a proponent of hormone replacement therapy, bioidentical, or simply maximizing the body's ability to produce hormones?

Dr.Kelly Miller: Both. It depends on the individual, and depends on their age, and depends on how bad they are. I'm actually a proponent of bioidentical in late life, and that's just something I've just, over a long period of time, transitioned to. What we try to do is we try to maximize a person's own function naturally, through diet, exercise, supplementations. We have protomorphogens, we have adaptogens, we have different things and that

works very well for a lot of people, and it works very well to a certain point.

But when we see patients in significant cognitive decline, I use a bioidentical, because we've got to shore them up very quickly. We've got to reverse the degeneration, and we have to get their cognitive function restored.

Wendy Myers: That's a really, really good point. Is there anything else that you do to maximize brain function in your clinic?

Dr. Kelly Miller: Yeah, one of the biggest things, if we look at the title of the book *Saving Your Brain*, each letter is an acronym, so S is for sleep. The question is which came first, the chicken or the egg kind of thing, but there's an interrelationship between sleep and brain function. I'm of the opinion that when you have sleep disruption, it's a symptom of your brain's dysfunction, okay? But either way, if you're not sleeping well and if you're not ... Normally you should go through five cycles of sleep and cumulatively about 90 minutes of each.

One of the things we know now if we get into this Delta sleep, that's when we clean the brain. We now know we have a lymphatic system. It's the only time we never produce a beta, but it's kind of like taking a dirty sponge and is cleaning everything out, it's what's cleaning the brain in metabolically, so we don't get in that deep sleep we're not cleaning the brain, so sleep is really big.

A is for the autonomic balance where we talked about the sympathetic and the parasympathetic and how important that is. B is for vitamins, minerals, antioxidants, there's a lot of key things. One of the biggest things somebody can take is something called Huperzine A, we have a product called Memory that we use for that. It has also a little acetylcarnitine, which helps production of acetylcholine. But Huperzine A is used in China as the number one drug for Alzheimer's, and it's not a drug. It's Chinese moss, it's a food, it's an herb. It prevents, reverses or dissolves a beta in five different pathways, so natural food or antioxidants are much better than drugs for the brain because drugs only work on a single pathway, whereas something like curcumin also has antioxidant, anti-inflammatory, has multiple different effects.

I is for infection-inflammation. We talked earlier about Robert and the mold infection, so we find a lot of people in Florida have mold infections, but they have a lot of chronic in their ...

N is for the neural homes. G is for genetics. Half of the people who have Alzheimer's have something called the APOE E4 gene. It's just not as efficient at getting rid of a beta out of the brain. If you take niacin you can compensate for that. What most people don't know about the genes is that most genes are actionable. If you know you have this gene it just says a weakness, but there's usually a solution for it.

Y is for your belief system, and we talked about earlier about stress and your perception of stress, so how you perceive things. O is for obesity, oxidated stress, use for unfriendly environment. That's your bailiwick, the unfriendly environment and the heavy metals part of that. R is for reading. B is for blood flow. R is for repetitive head injury. A is for Activity, exercise.

I is for insulin sensitivity, resistance that ends for neural transmitters, particular the anxiousness and depression. When I look at someone's brain, I kind of look at, "Okay, where's their Achille's heels? Where's their weak link and where can we shore this person up?" So it can be different for different people, but the two biggies, blood sugar, regulation, again, knowing if you have the APOE E4 gene, that's compensated by exercise and niacin and, again, stress levels, and the sleep is really big too. So, we put a lot of ...

Wendy Myers: Yeah, so many different things impact our brain, but so many things we can do also. You just have to figure out what your weak link is. That's why you help people try to figure out in your book, *Saving Your Brain*, can you talk a little bit more about your book, where people can get it?

Dr.Kelly Miller: Sure. It's on Amazon. You can get a paperback or you get it on Kindle on the electronic version. We have it on our website as well, www.drkellymiller.com. I'll even get you an autographed copy if you order if from there. But yeah, it's just kind of a blueprint.

The reason I wrote this book is I started ... I'm 63 now, but probably in my mid-50s I could really tell my brain was having some problems. I used to have my whole schedule in my head. I mean, I could just remember all that stuff. I used to be a movie buff and I used to remember all the actors and the actresses names, and different scenes, and then it started to get where I could see their picture, but I was actually having to use Google, like, "Who is that person? Oh, yeah." But that's something I should have known. And travel a lot, and I'd be looking pictures with my wife, I'd be look at these pictures of France and, "What city was that? Where is that?" Just I could tell there were some problems.

So I started researching, and probably I tell people I grew up in the '60s and I was very experimental, and if one was good, three or four was probably better, so that probably affected. I also played rugby for 21 years and I was probably in 10,000 tackles, either giving and receiving in the position I played. Yeah, I think were just some accumulative. I always took nutrients and different things, but I think those were some cumulative factors.

I started look at, when you look at the brain they've done 350 studies, drug trials for Alzheimer's. In fact, a couple of the pharmaceutical companies this last year just threw in the towel because, as we talked about, there's not a single pathway to Alzheimer's, and that's how a drug works. It either inhibits or stimulates a enzyme activity. When we look at

Alzheimer's and you've got at least 10 different pathways or more that can create that scenario.

What I started doing, I just started looking at all the different research that was out there that would help brain cognitive function. I looked at things that related to a beta formation, dissolving a beta. A beta is associated with Alzheimer's, I don't think it causes Alzheimer's, I just think it's a byproduct the same dysfunction. But we look at that information-

Wendy Myers: And you're talking about the beta amyloid plaques?

Dr. Kelly Miller: Yes, the beta, exactly. And so there seemed to be a symptom causing the same thing. I mean, why is the body producing a beta. We talked about earlier that a beta actually binds the heavy metals, so if you have aluminum and mercury in your brain it makes sense you're going to produce a beta to try to wall off those neurotoxins. The other thing a beta does it's a natural antibiotic, so if you think about it if you have infection in the brain. We see all the Lyme's disease, we see all these different things. I've seen bar that create a mold, very neurotoxic, so it makes sense that we're forming a beta.

I think a beta, that production is natural in the body, and the problem is is we're doing it too much because we're creating the environment that we're trying to protect in another way, and then we can't clear the beta. So when we have someone who has the APOE E4 gene, which is not as efficient at that, and they had the Mercury, and they had the aluminum, and they have the infection, then they're going to be more susceptible because they can't clear out that beta.

But we looked at the different information on there and so we did a chapter on different things. We have one on Daniel Amen, he's a very famous guy, he's an atypical psychiatrist, and he uses something called SPECT imaging, which is like a 3D visualization of the blood flow of the brain. He did a great study with a half a dozen other doctors on 30 ex-NFL players who had traumatic brain injuries and/or addictions. It's interesting, they have a lot of similarities between an addicted brain and a traumatically induced brain.

But they were able to restore brain blow and improve cognitive function from just a pure nutritional standpoint, so we look at those nutrients they used, like five grams of Omegas. Very high fatty acid, but they were looking at the Huperzine A, they were looking at ginkgo biloba, vinpocetine, lots of these different combination of nutrients that are in the chapter. I've got two chapters just on nutrition for the brain.

And so we're just looking at all those things, we look at the infrared head harness, there was a research paper in Boston MA that they did this head harness with the infrared light, and we talked about the infrared light. What does it do? It increases nitric oxide, dilates the blood vessels, helps mitochondrial energy which is going to improve energy production in the

brain, facilitate and repair, get rid of detoxification. And again, they used SPECT imaging, showed increased circulation, then they showed cognitive function.

We used the audio-visual trainer. There was a great study in 2014 with 80 patients, mean age of 68-year-olds, and they all had cognitive functions. They actually measured our brain speed, so when we start having cognitive function is actually starts slowing down. Instead of say at 10 hertz, which hertz is just cycles per second, and it was down to 9.5, and they just gave these people alpha waves, which is at 10 hertz, and 30 treatments over a 60 day period, and they were able to get their speed up to 9.9, which is like an average 35 or 40-year-old.

Again, we see multiple natural modalities of using sound, light frequency, nutrition that are restoring brains. We see improved function of the brain, increased speed in the brain, increased circulation in the brain and, more importantly, we have cognitive testing. That's what we do. We do before and after cognitive testing and, most of the time when people come in, part of their brain's working well, but part isn't working as well, so we try to get the part that isn't working as well.

Again, we were talking about the different research. We just put that together and it's been an evolution, so even since the release in August we've implemented even more new technology, so we're always looking for something that's going to make a difference in their heart rate variability, like we talked about. Is it going to make the nervous system more powerful, and particularly the parasympathetic, the healing, digesting part of the nervous system, that power is going to increase the circulation. So we're still looking. We've got two or three more modalities we're getting ready to look at to implement.

Wendy Myers: Yeah. And so when you go to your conventional medical doctor presenting with fatigue, and brain fog, and depression and sleep issues, are they going to be offering any of these things?

Dr.Kelly Miller: No. In fact, most people will say ... I just had a patient who had imaging. Now I'm getting patients that are actually getting imaging so their brain is shrinking. I just had one whose frontal cortex was her executive decision, and they diagnosed her with depression. That's the reason she was having brain problems. I go, "No. Her brain is shrinking. Come on. Hello." So we're going to have the opportunity now, which I'm really excited about, that potentially in six months, 12 months, 18 months we could actually see a brain growing. Because if we restore the circulation, if we give that brain what it needs, then the brain can start to do that.

You can imagine it's just like a muscle cell, okay? When we work out we don't get any more muscle cells, right? Just the muscle cell becomes bigger, more efficient, so we can get more efficient. That neuron that not working very well, this next one could be a little better, and the next one

could be a little better, because if that wasn't true, nothing could get better.

Wendy Myers: Yeah, you couldn't learn anything new as you get older.

Dr.Kelly Miller: Yeah, you couldn't learn anything, when nothing would heal or repair in main. In 1980 when I got out of school, we just thought we had so many brain cells and we just kind of whittle away at them. And I whittled away at a lot of them, but-

Wendy Myers: You worked really hard, like we all do.

Dr.Kelly Miller: ... we know, even if you're 80 or 90, we can create neurogenesis. Neurogenesis is the birth of another better nerve cell. What we were able to look at is what can we do in our environment, internally-externally, to create that environment to create more neurogenesis, so that's what we're trying to do, we're trying to create.

Wendy Myers: Yeah, and I asked you that question about that if you go to your conventional medical doctor, can you address any of these issues? I say that facetiously because so many of our listeners, including myself, have shown up at their doctor's office, "Hey, doctor, help me. I don't feel good. I'm depressed. I'm tired. I can't think clearly," and they're only presented with a medication as a solution. So I caution people to just take that as the end all be all. There's so many things that you can do that you'll just never have any hopes of learning about at a conventional medical doctor's office.

Dr.Kelly Miller: Yeah, and in all honesty, I think most medical doctors are sincere individuals who want to help people. I absolutely believe that. The problem is, is they're limited by their training and there are more doctors breaking out that box, but it's hard for them to break out of that box because they have something called malpractice. If your cholesterol is 250, the appropriate thing is to give you a statin drug, period. That's it. And if you don't do that and you have a heart attack, and even though you can take a statin drug and still have a heart attack, then you have adverse reactions and your peers will not back you up, you see? That's why it's hard that people don't get, that's hard for a medical doctor to break out of the mold because if something goes wrong ... It's okay if I give you the drug and you die, because everybody else does that. So it's hard to do that.

But the other thing I think people need to look at is the reason they're sick is not because they have a deficiency of medications in their body. That's not a cause effect. Why we get sick, we have genetic variance which can make us predisposed, we have a lot of environmental toxins, we have a cumulative trauma in our life, it's what you eat, what you drink, how you rest, how you exercise, what you breathe and what you think is vitally important because that dictates everything you're going to do in your

lifestyle, in your belief system. That's where we look at. That's where we should look at a physician.

When was the last time you went to the doctor and they go, "Well, tell me about your diet. What are you having for breakfast? What are you having for lunch? How many fruits and vegetables are you having? How's your sleep? What time do you go to bed, what time do you get up? How's everything in your personal life? Are you having any emotional strife? Are you doing this? What are you doing for exercise?" They don't ask, they're not looking at the causes, they're looking at a symptom pattern and I know that I've got a drug repertoire that these symptoms, I can mask these symptoms with that.

We have to kind of rethink what we doing.

Wendy Myers: Yes. Well, Dr. Miller, tell the listeners where they can find you and how they work with you and improve their brain.

Dr.Kelly Miller: Yeah, we've got three locations. We're in Tampa, Florida, Naples, Florida, Kansas City, Missouri, savingyourbrain.com, the locations. We're actually working with other doctors to expand those locations throughout the country, but they can come to locations, but they can also contact us and through the website we have portals, savingyourbrain.com. They can go in and fill out information and questionnaire there, or they can go to drkellymiller.com and inquire, and so we can meet. Many patients we can Skype like this. We could meet with them and help them that way.

Wendy Myers: And so you work with patients in-home even if they're not able to come into one of your clinics?

Dr.Kelly Miller: Yes. It depends on the ... It's very individual. It depends on what we do. Many of our patients will come in for an initial assessment and then we can work with, and we've designed where we have many of these modalities at home, so once we've worked the person up and we know where their weaknesses are and balances are, then we'll put them on a regimen, maybe with an audio-visual trainer, change some diet. We may be working on some certain exercise with them, and then we can periodically reassess them, 60, 90 days.

Most of the time we'll see a 30% change in the brain for the positive in a 60 day program. That's what we're routinely seeing in the three clinics right now.

Wendy Myers: You know what? That's amazing.

Dr.Kelly Miller: It is. It's phenomenal.

Wendy Myers: I mean, anyone would be happy with that. Anyone would be happy with any improvement whatsoever.

Dr.Kelly Miller: It's a start. Yeah, so we try to do when we do a brain map, it's like we've got these 19 points of reference and we're looking for a green brain. Green is normal. Then we've got lows, which are in the blues. And then we got the highs are red and yellow. What we're just trying to do is get your brain predominately green. Green brain is good. Red and yellow brain is not good.

Wendy Myers: Well, Dr. Miller, thanks so much for coming on the show, and really, that was a really good hour of just non-stop information that I know some of the listeners are just really happy that they've tuned in for this house, so thanks for coming on the show.

Dr.Kelly Miller: Thank you for having me. I enjoyed it.

Wendy Myers: Yeah, and everyone, thanks for joining in to the Myers Detox Podcast wherever we explore different topics related to heavy metal toxicity and how metals, and chemicals and other factors and stressors in life, affect our brain, our physiology, our brain, and our hormones, et cetera. Thanks for tuning in. You can learn more about me and how to detox at Myersdetox.com. Thanks for tuning in.