How Nutrient Deficiencies Can Mimic or Worsen MS Symptoms Transcript

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Introduction and MS Mental Health

Welcome, to the next interview. Now I have Doctor James Greenblatt, who is an internationally recognized psychiatrist who uses functional medicine, integrative medicine to help patients with anxiety, with depression, with cognitive decline, even with eating disorders.

And it's really my privilege to introduce Doctor Greenblatt. And let's get right down to this Doctor Greenblatt. You know, I'm just so glad to, chat with you again here for people with multiple sclerosis, an autoimmune city.

We have so much depression. We have so much anxiety, and we have a lot of brain fog, which, you know, again, to the listeners, these are the main reasons we stop working.

The anxiety becomes a problem. The depression is a problem and we're having more brain fog. And so if I, our listeners, were coming to you, Doctor Greenblatt, I'm presuming that you have a lot that you could offer them.

You know, I think, you know, my card now says functional psychiatrist. So always kind of looking at the root cause. And it doesn't dismiss the stress of having an illness or the other psychosocial stresses in our lives.

But I'm just been much more fascinated with their genetic vulnerabilities to micronutrient deficiencies that that affect our health. And so the first step that I'd been, really keen on in a functional medicine workup for depression is a wide battery of tests to see if they're contributing factors.

Okay. So let's sort of talk about what those tests might be, because I know many of our listeners are thinking that my depression is from my multiple sclerosis or my other autoimmune condition, because, you know, I'm taking a lot of really potent drugs for that.

Functional Testing for Depression

I'm losing energy. And I thought I heard you just say there may be a genetic reason why more vulnerable you would do a little more thorough workup than perhaps their neurologist or their autoimmune specialist is doing.

So what kind of things would you be looking at? Sure. I mean, the list is long, but I think with someone struggling with depression and particularly those that didn't respond to our current model of symptomatic based, take an antidepressant, we would want to look, you know, from top to bottom.

So looking at at gut how dysbiosis in the gut, the micronutrient deficiencies, you know, I'm assuming most now to do your work and others might look at vitamin D levels and optimize that.

But that in Ms.. But that's a major contributing factor for depression. But it's also B vitamins and particularly the folate and B so following B12 so that's B9, B12, folate COBOL common and shocking like a lot of my neurology colleagues are not checking those things.

So are you a little concerned about that. So you took a fully B12. What about homocysteine. Would you add that in there as well? Yeah, that would be a routine test to see if it's elevated and often it's normal.

And people just assume that the B12 and folate doesn't have to be addressed. And I've seen many times normal homocysteine. But very low B12. Okay. And what what do you call a normal value in your eyes, Doctor Green?

Well, that's what I wanted to say. And we can, we can. I, I kind of had poke fun or yell at some of your neurology colleagues or any of our colleagues in medicine.

They look at a B12 level and all the labs, I'd say normal, somewhere between 200 and 1100. Right. Some labs, it might be 220, some labs, 180. But, you know, I learned this early in my career and it's been shown to be true that people do not feel and function well on these levels.

And we treat everyone aggressively under 500. Yeah. You know, so I have a pilot's license and, before having my kids, I flew a single engine plane. It was so much fun.

And one of the things that I learned was that the pilots always want to have their B12 in the 900 to 1000 range, because, you want to be sure your proprioception is really good when you're flying around, up and up in the sky so you don't lose control of your plane.

So I think that's super interesting that we know are pilots, military pilots, commercial pilots and recreational pilots are all told, watch your B12 and be sure that it's not low.

Keep it up in the top quartile near the upper half. The upper limit of your reference range. And that's a great story. I'm going to use it, but it's it's so important.

And particularly with autoimmune, I've been treated a lot of Ms.

B Vitamins and Nutrient Deficiencies

patients, but I've treated a lot of patients, other immune disorders that optimizing the B12 have made a significant difference in their mood and oftentimes other aspects of their health, because we know B12 is significantly related to many aspects of neurology and nerve function, you know, and I particularly worry for the people who are vegetarian and vegan, who I think are even greater risk for that low B12 and low folate.

So what else are you checking in this long list of stuff that you do for, the, you know, all of the B vitamins it's harder to check for, vitamin B6 looking at serum levels.

So that's pure dioxane. Paradoxically, but it's important for metabolism of amino acids and making all the neurotransmitters. And there's one urine test that we routinely do called crypto pyro.

So it measures this pyro metabolite in the urine. And it kind of demonstrates that what we call functional deficiency of B6, because this molecule just binds B and takes it out of the body.

And it's usually associated with anxiety, depression. And again I've seen a lot of patients with chronic medical illnesses have this crypto pyro. And they just need higher amounts of B6, sometimes 100mg.

And most physicians would be a little nervous about that higher dose of pure dioxane. Because that can cause, some nerve damage. So, again, your medical team may not be as natural as Doctor Green, but, in terms of the need and benefit of ordering, it is this a blood test?

It's a very simple urine test, a urine test, so it's easy. And the neuropathy that people worry about is over a hundred, typically of B6. It goes away completely when the B6 is stopped.

And I've seen it a couple of times when people did higher than 100. But I've never seen it with somebody who had this crypto pyro. Yeah. Correct. So again we're talking about B6, B9, B12.

Any others. You know the thiamin riboflavin. Are they important to check as well. Well riboflavin I kind of leave in the dust. I don't have a lot to say about it, but thiamin I think is probably up there is one of the more important ones.

And for depression, you know, unrelated to chronic illness, we typically would try to recommend high doses, sometimes 100 to 400mg, which has been incredibly helpful.

And there's been a lot of new research on timing for things like chronic fatigue and other kind of environmental

illnesses. And, I believe there's more bioavailable forms of thiamin.

Do you have any opinion about which version of thiamin that we should be using, or for that matter, which version of, folate or Kabbalah? I mean, you'd have your people use.

Sure. I mean, the folate would be the L methyl folate and the B12 would be hydroxy Kabbalah. I mean, you know, or methyl Kabbalah, I mean, and the thiamin.

Yeah. There are these fat soluble thiamin that is is good for neuropathy and, and certainly would be helpful on those. But then for to me is a form of thiamin that we would typically recommend.

Okay. Do we have anything in terms of any minerals that are particularly important for our mental health? Yeah, I guess that's the long list. Every mineral and the ones we can least test for and assess would be that are important in depression.

Significant and research has exploded these past two years. Would be zinc, magnesium, chromium and lithium as a trace element. Those four. Yeah. Well, let's talk about each one of those, because I was just recently became really fascinated with all those minerals as well. So magnesium I think people again, also want you to know that I believe a majority of Americans, according to the Nhanes data, our nutrition data tell us that we do not get enough magnesium in our diet, and so we're mostly magnesium insufficient if not magnesium deficient.

So what does magnesium do? Why is it important and how should we measure for it? Yeah, I would say it's probably the most important. Mineral. Well, I might say that about all the minerals, but anyways, it's important and I probably would recommend every depressed or anxious or ADHD patient take magnesium.

Minerals for Mood and Brain Health

The concern is we don't have great forms of testing for magnesium because most of the magnesium is in our tissue, cells, bones. So a blood test does not help an RBC.

Magnesium is a little more helpful, but I haven't seen it accurate. So I look at clinical symptoms. Someone is yeah anxious, can't sleep well constipated and any kind of spasms, any muscle spasms.

And I would think that would be quite common. And miss magnesium is based on kind of clinical history and stress. When stress levels go up, magnesium is depleted.

Yeah. And do you have thoughts about which form of magnesium you prefer that people take? You know, I've been using magnesium glycine for many years and it seems to work.

There's capsules, there's liquids. Try to get, you know, 4 to 500mg a day, divided at least twice a day. Yeah. I also love putting people in Epsom salts soak or a Dead Sea mineral.

So to help also help support that magnesium, incredible way, to help sleep and, stress. It's great to do with kids. Do a foot baths with some of the magnesium, liquids and Epsom salts.

Now, let's talk about zinc. Zinc is, you mentioned, you know, vegetarian and vegan diets. So there's, many sources of zinc deficiency. Dietary high copper in the environment causes low zinc and a lot of the environmental toxins being zinc.

So it's a common deficiency. It's critical for making our neurotransmitters. And it's also critical to support a melatonin synthesis. So sleep disturbances you know we've known zinc deficiency has been associated with ADHD and depression for a long time.

And recent research has demonstrated its relationship between suicide risk. So it's a critically important nutrient for brain health. And again, you know, I think of sources for zinc, shellfish and liver, and, you know, I think liver is

incredibly delicious.

I don't know why people seem to have some difficulty eating liver. You just have to learn how to prepare it properly. It can be. It's one of our family's favorite meals.

Actually delivered onions. So I think the next thing you mentioned was chromium. Why is chromium important for our brain? Chromium is important for regulating blood sugar.

Is least most of what we know about it. And there were a few studies early on looking at, adding chromium to diet and, supporting depression and whether it's related to a mechanism, a neurotransmitter synthesis, we don't know, or blood sugar.

But there were some studies looking at added chromium, to support depression. And in the testing that we've been doing for many, many years, we've just found a subset of patients with very low chromium levels that did better.

When that was repeated. And now let's talk about lithium. Now, when when I was a youngster in medical school, in training, we were using lithium for bipolar.

And it was actually a very effective drug. But there are some significant side effects with that lithium. But now I see some new, very interesting research about lithium in mood and mental clarity.

Tell our listeners about some of this, new, very exciting stuff that we're learning about lithium. Sure. Yeah. As you said, lithium carbonate is a medication that is incredibly effective for treating bipolar disorder.

But there are side effects with long term use. I was fortunate to hear about lithium rotate, and nutritional supplement maybe 40 years ago. And, been using it in my practice for 30 years with, not a lot of research to support the form of lithium arreté that we were using, but it was clinically very helpful because lithium is a micronutrient that's essential for brain function.

But what's happened the past couple of years and six months ago, a major study came out of Harvard looking at brain biopsies of those that had Alzheimer's and mild cognitive impairment.

And they looked at, I think, 50 different elements. And lithium was low, the only element low in the brains. And then they did this remarkable study on these genetically bred mice who developed Alzheimer's pathology plaques and tangles early on.

So they were able to show that lithium, or Était, was able to reverse the plaques and tangles in these mice models. But hang on, this was such an interesting point that we have people.

We have an epidemic of cognitive decline. We know people with, depression were at risk for early cognitive decline, and people without immunity were at risk for early cognitive decline.

And what Doctor Greenblatt just pointed out is that we have a mechanistic study showing us that people with cognitive decline, we have low lithium in our brains.

They checked it out in mice, induced low lithium, and reversed the low lithium. And the cognitive impairment significantly improved in those little mice.

Am I paraphrasing that all correctly? Yeah. Amazing study. And then they one step further by giving a lot of lithium in the diet. Again from mice that develop plaques and tangles very early in their life, they prevented the development of Alzheimer's pathology.

Well, I have to note that after reading all those papers, I added lithium orit to my daily supplement regimen. Like, you know what? I just want to be sure I don't have any insufficient lithium in my diet.

And then I talked to my spouse. I said, honey, I think we should have you take a little bit of lithium too, because I gotta keep you well tuned as well.

So I think, you know, a little bit of lithium irritate is a profoundly simple, supportive supplement to take. What dose are you having your people take?

You know, I think, you know, I use it from 1mg to 30mg. And, you know, if there's no clinical indication meaning irritability and impulsivity due to a psychiatric illness, I'm currently resting on the two milligram dose.

You know, they're 2 to 5 milligram, two milligrams for prevention. It's close to what we can get in our diet and water supply. And the research, the long term research looking at Alzheimer's in communities with high and low lithium.

Lithium and Cognitive Protection

The difference was in micrograms. So if you lived in a community that had higher lithium in the drinking water, they've followed people 17 years lower rates of dementia and Alzheimer's.

So we don't need a lot. So since we don't have that answer, I'm concerned about people taking too much lithium. We don't know what that does. I mean, we would use it in a psych patient, very easily.

So that's why I've settled for prevention around that. 2 to 5mg. Yeah. You know, I use that five milligrams every day for myself and have my spouse doing five milligrams twice a week.

So, like, I think I, I really think this is another essential nutrient that is not part of your multivitamin, by the way. It's not part of your multi mineral.

So adding just a little hint of lithium irritate I think is a very simple preventive measure to decrease the possibility of cognitive decline, which unfortunately for those of us with multiple sclerosis and all of us with a systemic autoimmune disease, we are at higher risk.

When we first started, you mentioned that you're using some genetic testing to understand, am I at higher risk for these nutritional deficiencies? Can you explain how the genetics might tease out who's at highest risk for these problems?

Sure. I mean, it's a you know, we have thousands of genes and they drive who we are and what we do. And I just appreciate it more and more over the last few years.

They also kind of dictate something. I've been preaching for a long time, but I didn't have the tools to assess that. Everybody's nutritional needs are different, right?

That's a core principle of functional medicine, biochemical individuality. But now, I mean, there are genetic tests where we can see that someone has all these genetic polymorphisms that demonstrate you have a much higher need for vitamin D.

We should explain what a polymorphism is. So listeners may not know. And so the wild type of my gene is the wild type. It's the type that most everyone has.

But I may have swapped out at some time in my ancestral mothers or dads going how many generations ago swapped out one of those base pairs. And so I don't have a wild type gene, and my gene might work just as well for that function, or too well for that function or not well enough.

And when you don't have the wild type, that's, that's that polymorphism part in our back to you, Doctor Greenblatt or so I, you know, I looked at a case today looking at the these genes.

And this person had a gene that causes a, excretion of B6, so might have a higher need for B6. Doesn't, the

vitamin D there about 4 or 5 genes, that affect many aspects of vitamin D from how you make it from the sun to how your receptors work.

So there's some individuals that might need 5 or 10,000 international units just to keep a level up. So we can go on and on with many micronutrients. And particularly if you're struggling with a chronic illness, it would just be a nice guide to know that you might need a little more magnesium, might need a little more B so the genetics can give a clue.

And I think I'm hearing you say that it gives you a clue that you might need more or less. But you are you interpreting the genetic information plus the blood or urine levels of your various nutrients?

Absolutely. Yeah. It's always that dance between this genetic vulnerability and our environmental circumstances. But I think for complicated patients and I think those with a chronic medical illness and like a depression to many people, get in the habit of just popping supplements, you know, not knowing where to go.

And this guides us. The testing is first step critical, but then the genetic neutral genomic profiles kind of guide us. And then kind of fine tune recommendations.

You know, one of the things that I talk about is how I do is a combination of the genetics I got from my mother and father, the microbiome that I have, the food that I eat, then of course, all the other environmental factors.

And I think there'll be a time when we're getting closer and closer to this where we can go in. We could collect some saliva, some blood, some urine.

Genetics, Microbiome, and Personalized Care

I'll give you a little kit to go home and swab your poop, and we'll send all of that stuff back in. And in about a month, I'll get reports on your genetics, your nutritional levels, your microbiome, and will probably get a report that tells me, based on on this information, in your current symptoms and diagnoses, these diets will probably be helpful.

These diets will be less helpful because one of the things that we we saw Doctor Green Book in my study, comparing the low saturated fat diet to the modified paleo diet, we looked at their stool microbiome.

We could predict who was going to have a really nice response to the low fat diet, and who was going to have a really nice response to the paralytic diet.

And it's not the same. So, you know, I think this makes sense to me that the food I eat has to have a dance with the microbiome and with my genetics to influence, you know, my immune function, my neurotransmitters, and therefore, you know how well I'm doing.

Yeah. I'd love to have your thoughts on that, if you care to expand your thinking on that. No, no, I agree. And there actually a couple companies that that are doing that now.

And they're actually looking at your entire genome, looking at all the lab tests, looking at your microbiome, and kind of putting this in your kind of patient record.

And if you get a certain symptom, they'll be I will analyze all that information to kind of support your doctor. So right now these couple companies that I've heard about are going to be kind of tools for physicians to support their patients with all that data behind them.

Yeah. You know, it's exciting and a little scary at the same time. Yeah. But yeah, it is exciting. And I do think that is that is the future. And it also has me thinking about some other books that I'm reading about the biological evolution of humanity and how, you know, our genes evolved over millions of years.

And we do have considerable variation, which would make it easier for you to thrive or be cold if the environment

changed in your genetics and your microbiome.

We're not as fit for that new environment. So, a lot of stuff to think about when we when we have the opportunity to learn this much fine tune our response, optimize our health.

And again, for our listeners, what Doctor Greenblatt and I are talking about things that you can do nutritionally and supplement wise, but we also want you to be sure that you were doing the modifiable lifestyle factors that are so important.

So and we have we have a few more minutes. So I'd like to have you talk with the listeners. What are those lifestyle factors that we could we we should also be addressing, in addition to the testing that we, we, so eloquently discussed as a psychiatrist, the answer is very simple, because we have a pretty dramatic research saying exercise is the best antidepressant.

It works really well. Any form of exercise, you know that. So exercise is want sleep. You know, sleep deprivation is one of the most rapid paths to deteriorating mental health.

Depression, anxiety, even suicide risk is associated with sleep deprivation. And and then, you know, diet. I mean, I think you've done a lot of work, but some people are much more vulnerable to a ultra processed food diet and others it is a rapid path to, you know, significant, health consequences, inflammation, insulin resistance.

So yeah, there's so much we can do, you know, diet, live cell optimizing sleep. I think as a functional psychiatrist, many of our patients are walking into the office knowing that, but they're just not motivated.

It's a depression is getting in the way. But if we can do these interventions, optimizing the B12 like your pilots, it will help their mood and energy.

Then they're going to be able to, you know, be more motivated to exercise.

Lifestyle Strategies and Closing Remarks

Now, are folks who are listening to this hopefully are, Open to moving more walking, getting a step counter, just getting up every hour. I can go a long way.

Replacing the sugar sweetened beverages with water, teas, coffees with replacing the white flour based breads, cereal, pasta with whole grain pasta, whole grain, preferably whole grain gluten free bread, or even better yet, potatoes, yams and squashes.

These food swaps, can really be super helpful whether you're going to do a mediterranean diet, epileptic diet, a ketogenic diet, the one diet that I think doctor Greenblatt and I completely agree on is the sugar in white flour based diet that so many of us are eating is really sapping our brain in such a negative, negative way.

Okay. Well, I see we've got about, 35 minutes in. I want you to give us a what are the high level messages you want people to remember? And then I know you've had some, really wonderful books just come out.

So let's be sure that we also talk about that, too. Well, I'll start with the best part of the book is the name Finally hopeful. And that's where I just wanted to share that, many people in the mental health shop, mental health treatment.

I've been frustrated because they feel like a guinea pig. I keep hearing that multiple medication trials and they're not working, but I'm just confident that a diet lifestyle and a kind of functional approach, looking at your kind of biology, that depression can be treated.

So that's the most important thing. You know, I can share that there are paths beyond just medications. And the name of the book, One More Time is finally hopeful.

Do you happen to have a copy of that book by your desk? You'd hold it up for everyone to see. Not right here. No, I did okay. Hope I should have thought of told you to grab that.

All right. So finally hopeful it is out. You can get it from your local bookstore or your favorite online retailer. And the key message that you want everyone who's listening today to take Doctor Greenblatt is that everyone's different.

Your neighbor might be depressed and have a thyroid problem, and you might struggle with depression, might be a B12 issue. But with the individualized care and finding a doctor that can look a little deeper than just prescribe pills, that there is absolutely a path to feeling better and not continuing with depression or anxiety.

Okay, well, thank you so much, Doctor Greenblatt. This was really wonderful and I look forward to seeing you together. I'm sure we will meet up in one of our integrative conferences.

All right. Thanks Terry.