



**THE SPECTRUM
OF HEALTH**
— P O D C A S T —

Podcast Session #67

***Analysis vs. Diagnosis Through
Bio-Electric Chemistry***

With Dr. Darrell Misak

Dr. Christine interviews Dr. Darrell Misak, ND, RPh. Dr. Misak has continued his search for truth in health with a goal to teach and change the world. He performs regular lectures and YouTube shows teaching the concepts of bio-electric chemistry and how to optimize personal energy efficiency.

To learn more about Dr. Misak, visit: <https://vitelometry.com>

Dr. Christine Schaffner: Welcome everyone, to the Spectrum of Health podcast. I'm here with Dr. Darrell Misak. I'm really excited to have this conversation. We're going to be talking about the analytical versus the diagnostic approach to health and aging. He has a wealth of knowledge and has a lot of unique experience and tools. And just a note on his bio, Dr. Misak is a naturopathic doctor and pharmacist. He owns and operates his practice in Pittsburgh, Pennsylvania, where he focuses on health analysis and how to support optimal energy formation to result in natural health restoration. So welcome, Dr. Misak, it's really an honor to meet you.

00:36 Dr. Darrell Misak: You too. I appreciate being on the show. Thanks for having me.

00:39 CS: Great. Well, you have a really unique skill set being a naturopathic doctor and a pharmacist, so you're bridging these two worlds of medicine and learning what pharmaceuticals have to offer in a pharmacology perspective as well, so it's a great integrative blend. Tell us a little bit about you and your story and the work that you do.

01:00 DM: Well, as a pharmacist, I went to West Virginia University. I ended up at Duke Medical Center after traveling Europe for three months on a bicycle, that was fun.

01:08 CS: How fun.

01:09 DM: At Duke, I learned that modern medicine is not necessarily about curing, it was about cost-effectiveness. I've always been one of those people like, "How do things work?" And so I'd fix things when I was a kid, I still like to

tinker on old cars, and I loved anatomy, physiology, biochemistry in pharmacy school, and I just asked that question, "How does the body work?" That led me to naturopathic medicine.

01:41 DM: And so I ended up in Portland, Oregon, at the National College of Naturopathic Medicine, now known as National University of Natural Medicine. I got my doctorate there, I did compounding pharmacy while I was there. And then, when I moved back to Pittsburgh, in all honesty, how they train naturopathic doctors is how to diagnose and how to use natural substances. And I'm like, "Why are people still not getting cured like they talk about in the history of natural cure?" This led me down my own rabbit hole of learning about chemistry and learning about the composition of the human body and the frequency, the electrical frequency of the human body. Because Tesla said, "Hey, if you want to understand the mysteries of the universe, you have to think in terms of frequency and vibration." And then you look at Einstein, that all things are relative and energy is the same thing as matter, and so we are matter, which breaks down to heat and electricity.

02:44 DM: And so then, I stumbled on the works of Dr. Carey Reams, who was trying to figure out how to put an atom back together versus taking it apart like Einstein, who determined that the human body is composed of minerals to create energy. 60% calcium, 24% phosphorus, 12% potassium, a bunch of trace minerals, and that we are a soil and that the composition of our soil is our ability to generate a threshold of energy, and if we are consuming more energy than we're getting from our food, then something's got to give. It goes with that naturopathic theory, the total load, "I exceed my body's capacity so then I get disease."

03:28 DM: So I just learned, how do you analyze and how do you determine where your threshold is and how to improve energy efficiency through diet, lifestyle, and re-mineralization, and how to watch people get better, using therapy as our frequency and vibrational base to understand how they work in the body. I watch miracles but I don't claim to produce them. The body heals itself if you create the right terrain for it to do so.

03:58 DM: And then that and the pharmacy background led to my other business, other than having a practice where I see clients, to where I came across VI-Telometry. And actually I came across in 2009 what I consider probably the greatest anti-aging discovery in the history of mankind. Three physiologists discovered it. It was discovered long before that, the aspect of telomeres and how cells turnover in our body and how to regulate telomeres. In 2009, they discovered this enzyme called telomerase and if there's high telomerase activity, that it inhibits or prevents telomeres from shortening, and therefore if they stimulated this activity, the telomeres would stay long, they'd actually reverse-age these mice.

04:56 DM: And that was like, "Oh my God." It was an epiphany to me. And so I turned around like, "Well, how did you stimulate telomerase?" So I read hundreds of abstracts and came across natural substances, and that's where VI-Telometry came about. So there's a lot of stuff that we could talk about from an analytical perspective to the diagnostic aspects and just whatever your listening audience likes to hear. I'm one of those people I feel that has a mission in life to educate and equip people that, "You can be healthy if you understand some basic principles."

05:30 CS: Yes, thank you. There's so much opportunity to discuss all of these aspects in the podcast today. I really appreciate your background and your expertise. We see a lot of persistent chronic illnesses that typically have pathogens, intoxicants and epigenetics involved. And we look at the mental, spiritual, and emotional health of people and how that can really create blockages to healing. I love a lot of what you said in that we're all innately wired to heal and we've gotten away from that idea with either conventional medicine or even substitution medicine with naturopathic medicine, just being green, allopathic medicine.

06:11 CS: Sometimes we recall that we're just looking at replacing a substance for natural substance, which is great, that has a role, but I think the work that you and I both do and a lot of my audience seeks is really getting to the root of why people are sick and really reversing things to not stay in disease paradigm. I'm also working on a project right now where we're talking to a lot of experts in the field of biological medicine, where we look at what we call the terrain and we look at really, how do we support the terrain so that we're more resilient to whatever comes our way?

06:48 DM: That's everything about what I'm talking today. I sum it up that illness comes down to two things: Deficiency or excess. But if you break it down, it comes down to deficiency, because if you have environmental toxins, if you have microbial overloads, if you have whatever it may be, heavy metals or whatever, you could turn around and say that, "My body has too much of this to be able to handle it," that's because there's something deficient in order to provide the means for that to occur...because everything is cause and effect. So when you break it down again, we can look at it from a hormonal

standpoint, we can look at it on the cellular level, from a homeostatic mechanism. When you're looking at homeostasis, that cell is as healthy as the environment. You're as healthy as you can be right now based upon the environment that you've created. So I've outlined a five-phase approach, it says phase one: Clean up your environment. Pure air, pure food, pure water, EMF protection. Phase two: Identify your specific stress. What are your toxic burdens? Analyze.

07:56 DM: Let's look at the body and analyze both deficiencies and your excesses. Phase three: Support. Support is not green allopathy. Support is, "What does my body functionally need in order to do the processes that are needed?" Phase four is detoxification. So if you actually have your threshold and you're exceeding it and you clean up your environment, you figure out what you're specifically reacting to and you get rid of these things. So now you're functioning below your threshold for stress, which is mental, emotional, spiritual, environmental, microbial, mycotoxins, GMO food. We could go on and on about the burdens that we have. But all of a sudden, you support the body, you're raising your threshold, so now I have this buffer zone for my body to restore itself. And so what's that restoration come down to? It's rebuilding cellular health. When I do it, I'm looking at mineralization. It's re-mineralization, and looking at what minerals control the body.

08:56 DM: It's primarily calcium, but what forms of calcium and what trace minerals are needed? I can explain symptoms based upon mineral deficiency. But then phase four, that detoxification, if you lower that load and you do all those steps, you naturally start to detoxify. Phase five is self-awareness. "Hey, something's still not right. What do I need to do?" Analyze, meditate, whatever it may be to say, "Hey, let's re-evaluate." Because we can only

function on the level of understanding that we have. And so people just get frustrated because they're not getting better. They've gone to these various doctors and they haven't gotten better because of the level of understanding, if anybody's been there. So when you take it to the next level, "Hey, wait a minute, you're telling me something completely new. Let's try your level of understanding." And that understanding or knowledge works, and all of a sudden you have wisdom. And the wisdom to be shared with people is just phenomenal because God freely gives it if we're really truly looking for it.

09:56 CS: I love all of this, and I often say, "Health is resilience." So I understand this model of your threshold, and I love that. Well, let's break it down. I'm sure people who are here, who are listening are thinking, "How do you analyze?" So if we want to understand our deficiencies and our mineral composition, how do we start analyzing our unique body?

10:15 DM: First off, when I have people come in, I do electrodermal testing. Some people use the ZYTO. I use an old biomeridian machine, electrodermal EAV. You can sit there and say, "That's hocus pocus," but I see probably 80-90% positive reactivity with this stuff. With electrodermal, you're electrically looking at acupuncture points, which the Chinese have verified, and you're looking for electrical impedance, that if you introduced a frequency, which everything has one, that's associated with a food, chemical, environmental substance, pathogen, whatever, into a balanced electrical point, if you shorten it out, it's like a yes, no answer. It's like electronic muscle testing.

10:55 DM: I do that for food and chemicals. I look at blood. I do live blood microscopy. I call it educational live blood microscopy because I'm not here to diagnose people and say, "Oh, you've got spirochetes in your blood," or "You

have parasites in your blood." Because we're not here to diagnose, and I'm not here to say that you have bugs in your blood, because we're not diagnosing here. But I can show you immune imbalances, I can show you activated lymphocytes or atypical lymphocytes and increased monocytes associated with mold, or I can show you increased eosinophils associated with parasites or allergies if there's also basophils there. And then we can show you the size of the cells and the variations that can be associated with iron, B12, or folic acid deficiencies, or you can see oxidative patterns that say, "Hey, you have high oxidative stress," or you can see clumping patterns that say that you're agglutinating, so you're going to have poor oxygenation in the body because you have too much salt in the diet.

11:58 DM: So we're looking at the blood from an analytical perspective. And then finally, I look at the chemistry and the urine. Sugars, pH of the urine, pH of the saliva gives a pre-digestive or a post-digestive association of what the body's doing, because pH dictates the speed that things go through the body. Sugar utilization, if you remember that Krebs cycle where all those fatty acids and proteins, they drop down to become sugars. And so sugar is basically the hub of how we generate energy.

12:30 DM: It's cellular efficiency and then conductivity, the ability of energy to get where it needs to be. Cell debris tells me, "Are you dumping and getting rid of the bad cells so your body can consistently build healthy ones? And, nitrates--nitrites versus ammonia nitrates. One tells protein building capacity and the other tells protein destruction or whether you're actually digesting. So you'll have high urea if people are not digesting. So then you're going to see overgrowth of bacteria, and then you're going to see those pathogenic formations, and you'll see them in the blood. It all correlates. And so analytically,

I sit there and give people a perspective based upon how well their efficiency is doing, and when you have those really, really tough cases like, okay, your chemistry is not moving the way that it should be, you have these atypical lymphocytes, we need to look for something else.

13:20 DM: I'll do more organic acid testing in people. I'll do mycotoxin testing in people. I'll do environmental toxin testing. I love hair analysis because it gives a long-term perspective of how well we're remineralizing, because when you start looking at it, you'll learn that it takes about three to four years for people to replete their selenium levels, because they're constantly using them in the processes because their thyroids are so stressed in that conversion. I just bring all this chemistry and people are like, "What are you talking about?" Let's simplify it, you need this for your thyroid to work. And we're going to measure and show you that it takes time for this restoration to occur. So restoration is different than, "Oh my God, you're sick. Let me give you some echinacea, vitamin C, zinc. This will get you better quicker in three to five days versus taking 12 to 14 if you don't do anything." And that's the way natural medicine is trying to present natural medicine, whereas I'm saying, "This is the stress of what your body is going through. Let's improve the big picture, and all those little small things, the thyroid, the adrenals, the ovaries, all these other things just start fixing themselves."

14:29 CS: You mentioned pH. For people who are listening, there's a lot of information around pH, especially testing your urine and your saliva. Do you have any clinical pearls for people who want to look at their saliva at home or their urine at home, and what are their optimal pHs and time of day?

14:48 DM: Optimal pH should be 6.4, and everyone thinks that it should be alkaline. PH is a measure of resistance. Everything breaks down. We think of things on atoms, but atoms break down to positive and negative charges which are called ions, and so pH is a measure of the resistance of how much stress you're going into...How much cations and anions are rubbing against each other, versus anions and anions, versus cation versus cations. It's a measure of the friction or resistance. So the higher the pH, the more resistance, the slower things go. And Carey Reams shared that at 6.4, you have the ideal amount of resistance that allows the energy to get where it needs to be, but not be too chaotic. What I tend to see is that a lot of people love to do particularly sea salt and the sea salt kinda gums up and gives you static electricity, and your pHs will drop with it and make things go faster to try to compensate for that static electricity.

15:54 DM: So you end up getting short term cortisol stimulation, so everyone is saying, "Hey, you get burned out the adrenals, eat more sea salt because you need the trace minerals, because the sodium will help with the cortisol levels." But the overall long-term complication is nervous system breakdown and you get increased anxiety. It's really a catch-22 for people. But pH at 6.4, if you measure an hour and a half to two hours after a meal, if you see that pH dive 5.2, 5.3, you're just eating a food you're allergic to. You will see food allergies, but it's better to correlate with both pH and what I call the brix using a refractometer. I've done shows on this, it's all on my YouTube channel, Doc Misak. But sugar regulation by measuring through a refractometer gives you the idea of available energy, and so what happens when people eat foods they are not supposed to, the brix goes skyrocket high and the pH dives down. So, you can learn what foods you're not supposed to eat.

16:55 DM: Or you can eat carbohydrates that cause an over-secretion of insulin from the pancreas, and the sugars will dive down, and so when the sugars dive down, "Oh my god, I can't think. I need to eat, give me that chocolate right now. Where's my coffee?" So if you learn to control your sugars and your pH right after a meal, an hour and a half to two hours after, you're learning whether you're eating the right amount or the right foods, and whether you're drinking enough fluid or too much, because that brix gives you an idea of hydration. If you over-hydrate, you can drink too much water and flush out your sugars and then you don't have enough energy to do what you need to do. So there's a lot of concepts that I'm tying in here, but for pH, the saliva tells you the strength of your bile, it's like a pre-digestive pH.

17:49 DM: And again, 6.4 is ideal, so when it goes high, 6.8, all of a sudden you're seeing liver congestion, you're seeing gallbladder issues, that's when you start seeing the need for people to do liver and gallbladder flushes, or when you see that saliva pH at 6.2, 6.1, they're going to have B12 deficiencies. And you're also going to see that they're going to start having liver breakdown, and you're going to see the elevated liver function test. So people who have elevated LFTs, check your saliva pH, if it's 6.2, 6.1, you probably need some B12 and probably more than the one milligram that people are taking. But again, I'm telling you it breaks down to deficiency and identifying the niche for that, but pH is a great thing to tell the efficiency of digestion. And so when you see the high pHs, and you see this sluggishness, that's where people need the Betaine Hydrochloride. When you see the pHs that are above 6.6 and below 6.3, digestive enzymes across the board will help them because their bile is either too strong or too weak, and so then it becomes inefficient when it gets too strong. So I'd break everything down to efficiency and balance, if you really think about it.

19:08 CS: You have great tips. And so people should then use a pH strip, you can get them on Amazon, and then you can test before and after a meal. The saliva pH, would you say needs to be 6.4 before and after a meal? We sometimes say, first morning pH. I don't know if you'd look at that...

19:30 DM: First morning urine pH is waste. Don't even bother.

19:35 CS: Okay.

19:35 DM: If you're going to check your pHs, it's best to test about an hour and a half to two hours after you eat because you're measuring the efficiency of what your body's doing with food.

19:45 CS: Okay. That makes a lot of sense.

19:46 DM: Makes sense?

19:47 CS: Totally. And then how about urine, would you say, 6.4 for urine too?

19:55 DM: Yes. It's 6.4. We call it the perfect equation. It's the only place where health has been explained scientifically and mathematically. Where we have a perfect energy resistance to where at the perfect equation one and a half bricks 64/64 pHs, 6.5 conductivity, the ability of injury, you to get where it needs to be. 0.04 M, 40,000 or 0.04 million particles in the urine, and then 3/3 nitrates. It gives you an idea of breakdown. When we look at energy input and energy detox ability by looking at that equation, now it's a lot to go into on

a short show. I wrote an article, if you go to docmisak.com to the media section, there's articles that I've written for naturopathic doctor news and review. I explained it all because you can look at that chemistry and where your chemistry is out. So say you have too high a pH, things slow down. You see constipation, you see congestion in the lungs, you see thyroid conditions, you see sinus conditions. When the pH is too low, things are going too fast. You see diarrhea, you see irritation in liver, people are irritable. You could predict symptoms based upon where this chemistry is falling in line.

21:17 DM: I explain all of that on my article in naturopathic doctor news and review, because in my opinion, I just stumbled across something that I think every naturopathic doctor should do. This simple testing tells you what you need to know about the human body, and then you can order your test based upon these values, and what you're going to find over time is, "I don't need to order those tests because they always confirm what I'm testing in the first place. I'm going to save my client's money and then I'm going to teach my clients how to test themselves at home, so they can learn the basics of, hey, when I'm this way, I need to take this support, or I need to eat these foods more importantly, or I need to drink this water." You know what I mean?

22:03 CS: Yes.

22:03 DM: I try to equip people in that regard, but a lot of what I wanted to talk about was with telomeres and even VI-Telometry if you're up for it.

22:13 CS: Oh, definitely. All these pearls are great and I know all my patients and my audience are always looking at ways that they can improve their health, and I think this is a really empowering perspective. Before we talk

about VI-Telometry, I'd love to just touch on, are there any other analytical tools or any other things that you use that you haven't shared that you want to share with the audience today?

22:38 DM: Analytical tools, I mean those are the main ones that I do, we talked about electrodermal testing, live blood, and then the urine and saliva testing. And I explain that as well. Like I said, if you're dealing with autism or people with mold exposures, because mold is such a huge issue with mycotoxins, and it's there to search, destroy, and break you down. And you've got to get that under control. Organic acid testing is invaluable when you're looking at potential for mold exposures. And then if organic acid testing is positive, you have to get a base of, how bad is it? Where am I starting? What's my starting point for where I am? And to re-evaluate to say, "Okay, what I'm doing, is it taking care of the mold in my body?" Again, from an analytical perspective.

23:32 DM: And again, I have done the heavy metal provocative urine testing in the past when DMSA used to be available. But now I find that with the hair analysis, I find that if you balance out your chemistry and then you monitor your hair analysis through it, you'll notice that all of a sudden more starts coming out in the hair because as the chemistry becomes more efficient, the body says, "Hey, I don't need this." And your hair is this waste, it's a biological excrement, it's a waste from the body that says, "Hey, let's just dump it in there because it's going out." And you'll see it higher in the stool as well, if you do fecal stool testing. I just stopped testing because I thought why am I having people run these \$150 tests when I know exactly what's going to show up. Do you know what I mean?

24:21 CS: Yes.

24:22 DM: I've just gotten to the point that I just trust in what I'm doing, and if they want and need that analytical perspective, here's the test that you can do and we can show you that it's coming out. Everybody wants, like, "I want to feel better now, I've got to get these bugs killed now." And I'm like, "No, you've got to keep your chemistry stable, and as you do, the body slowly and steadily just improves." And based upon age, if you're looking, somebody who is less than 20 years old, you can usually in 6 to 9 months see them restored. And somebody who's 20 to 40, you're probably looking at 12 to 18 months. When you're looking at somebody 40 to 60, you're in reality looking about 24 to 36 months. When you're looking at 60 to 80, you're really looking over three years, when you're looking at somebody over 80, you're looking at a four to five year process for restoration, for them to get back to where they feel that aspect. It's slow and steady because you're dealing with the burdens of accumulation over that period of time and in your body, there's no magic detox. You go through a series of healing responses and you can measure and you can explain to people and you'll see it in their chemistry. "Hey, you're experiencing this. You're starting to detox." Now, we can do these therapies like sauna and foot baths and hyperbarics and these old constitutional hydros. And you can do cryotherapy and these other therapies to stimulate your body to detox more efficiently.

26:00 DM: So it comes out a little faster because now your body is naturally doing it and now it's supported while you can handle it because you have a good energy efficiency. Because if you just keep stimulating detox and they can't handle it, people are just like, "Oh your detox symptoms are just crappy. And I'm sorry you're feeling that way, but that's healing." It's not. You don't

have to feel like crap to get better because when you get the efficiency up...detox is short term crappiness for long term happiness. But overall, you don't have to feel like crap all the time, once your body starts that natural process, now let's speed it up.

26:38 CS: I'm glad you put that out there. I think in the world of chronic illness, there's a lot of conversation around, "Oh you have to feel worse before you get better". And I agree there that you don't. So before we talk about telomeres, minerals are such an important part of our health and we're living in modern life with depleted soil and our food supply is just so compromised. So, most of us are in a deficient state. What are your tools or what kind of therapies do you educate your patients on to remineralize? I'm super curious because we see that as well. I just love learning what other people are using and what you find to be effective.

27:22 DM: Carey Reams, he was in agriculture and a genius in regards to understanding frequency and vibration and energy efficiency. And so there's about 150,000 types of calcium on this planet that break down to seven groups, and six groups your body needs in order to manage the various processes. I don't know if you're are you a chiropractor or?

27:47 CS: Naturopath.

27:50 DM: Oh great! So what you learned is like, when, you do that EEG or that EKG or that EMG, the electromyoccephagram, we're measuring the electrical activity of the brain or the muscles or the heart, right? But what governs that action potential? Sodium potassium channels initiate it and calcium chan-

nels allow it to go through. But where in school did we learn what mineral ratios or that we need to take those minerals in order to affect ourselves on an electrical basis? Never! Nobody taught us that stuff.

28:25 DM: So what Reams showed us is that pH is governed by forms of calcium. So calcium lactate and calcium phosphate lower the pH for people who are too high. Calcium carbonate, tricalcium phosphate, calcium citrate, calcium hydroxide, coral calcium, which is a carbonated form, these raise pH. So when I'm looking at pH it tells me what forms of calcium that person needs and how deficient they are in that aspect. And with the pH, Reams also showed that electrochemically, when the body gets outside of a pH of 5.3-7.2 minerals electrically can't be used by the body. So you could take them and have expensive poop.

29:13 DM: Because, you're just pooping them out because your body can't use them. And so you use the minerals, primarily calcium and vitamin D to slow things up to bring your pH up or you use the forms of calcium lactate or phosphate to bring the pH down with vitamin C to speed the chemistry up and then you get it into the range where the minerals get accepted. So the primary minerals that you find need for other than calcium are potassium for the brain, usually, magnesium, selenium for thyroid conversion, because we're utilizing selenium with thyroid because of the stress from the thyroid with the hormonal imbalances and everything that we're being challenged with today.

29:57 DM: And sodium, you remember anti-cancer, selenium for SOD formation in the liver and all that stuff. Remember all that fun chemistry crap? And Zinc, Zinc is needed for your body to make digestive enzymes, and Magnesium as well. Magnesium is needed for enzyme formation. So those are

the primary minerals that I find are needed. For hormonal imbalances you bring in manganese or in nervous system disorders, trace amounts of lithium or possibly even rubidium sometimes. So, I can't turn around and say, "Here's my magic mineral formula."

30:36 DM: But when I see conductivity ratios are off on people, those fulvic and those humic minerals work wonders for people. So if people who are like, "Oh my God, he just talked about all of these. I don't know. Now I'm right back to square one. I'm going to take a multi because it has it all in there." What happens is when you're taking these multis, you're giving the body minerals that require energy to be utilized and it puts a burden on the body.

31:00 DM: So I try to hone in on what people need. But in general, those fulvic and humic minerals, remember Morningstar minerals, stuff like that is great just to provide the body with a colloidal form, because colloids is what our blood is. Our blood's a colloid and things are dispersed in it. And colloids are so small, they're six to nine nanometers in size, so they can transport across cell membranes and they can replete the body.

31:26 DM: So you've heard of mineral springs where people go and get in these mineral springs and they get healed from the trace minerals and they analyze these things and although there's hundreds of minerals, they might have higher amounts of magnesium or calcium in them or something to that effect. So if you're looking for mineralization, I teach high brix gardening. It teaches you to remineralize the soil and the brix goes up, there's higher sugar in the fruit foods. But the higher the brix, the higher the mineral content of that food as well. And then who taught those principles? Dr. Carey Reams from

agricultural science from the 1930s with Abrams, all the way through the 1950s.

32:11 DM: They got into the politics of it and they're like, "It doesn't matter what we teach you and prove to you, you're going to do what big agriculture wants to do anyway." So they kind of gave up on the aspect of trying to teach people. But if you look at what the Amish and these other people go to, it's Acres conferences. Acres conferences teach re-mineralization of the soil so that we grow higher quality foods. That's where it really is because we were meant to get our minerals from the soil and from our foods. But, you know, I tried to get when natural medicine was trying to say, "Hey, back to the earth, let's talk about food science." And I wanted to go back and teach about high brix and I didn't get invited, but oh well.

32:57 CS: I know. This seems like information that still needs to be shared before it gets lost and has to be re-found again.

33:06 DM: Exactly.

33:10 CS: All great points. We use a lot of humic and fulvic acid in our practice and I feel like that's a great tool. Do you like electrolytes? It sounds like you don't like sea salt, but do you like different electrolytes or just different combinations?

33:23 DM: I do, particularly with people with infrared sauna therapy and colonics. We always give them a shot of electrolytes after colonics. We always give them a shot of electrolytes after the infrared sauna. You remember Bio

Nativus, their trace minerals. It's higher amounts of magnesium that are in because it helps with the enzyme activity. But in general, when I'm looking at minerals, I'm looking at the chemistry. My recommendations per se, start with what forms of calcium, whether they need selenium, zinc, manganese as trace minerals, whether they need other specific trace minerals, whether they're showing potassium or magnesium imbalance, and that's where I start with people. Here's another tip with urine pH. If your urine pH is below 6.1, you need more vitamin D. I don't care if you're taking 10,000 a day, 15,000 a day, 20,000 a day. If your urine pH is staying below 6.1, you're not taking enough and your body's not going to use it. And you can go check your blood after taking 20,000 a day for a year and you still will only be at like 40. And they'll say, "Oh, your vitamin D levels are good." And it's just your body needs it. So that's another little tidbit in regards to urine pH.

34:56 CS: Great.

34:56 DM: If urine pH is greater than 6.8 you need more vitamin C, you want to take more.

35:04 CS: Awesome, great tips. And so back to telomeres. You already shared a little bit in the intro about your work and your discovering your creation of VI-Telometry. But again, and please just share a little bit about what you created and why looking at telomere length is really the key to anti-aging.

35:22 DM: Oh, my God. I mean, those physiologists took mice that they prematurely aged to be in their nineties, white hair, crippled, kidney failure, cataracts, blind. They couldn't get through mazes and then they stimulated telomerase activity. Their hair went black, their kidneys restored, their cataracts

cleared, their brains grew 25%. And then they returned their agility to be like mice in their thirties, in their prime.

35:53 DM: And so when I started looking at all these things, you know, there's a lot of things that stimulate telomerase activity, and the things that shorten telomeres include trauma and stress. So if you had trauma when you were a child and it created a negative impact, how you emotionally handle that. So you could go outside and have somebody say something that sends you back to a childhood trauma like, "They hate me," you know, but that emotional stress has been shown to shorten telomeres, so people who have higher traumatic childhoods live shorter lives. But people who meditate and who have gone through healing and understanding and self awareness and accepting and forgiveness have longer telomeres and they live longer. So it goes down to a spiritual, mental, emotional component. But then you're also going to find that antioxidants are great for telomeres, you know, and certain vitamins. So when you go and look at all the products as a naturopath that are exposed to you, they're glorified multivitamins with antioxidant activity.

37:01 DM: I looked at plants that had telomerase activity and the one that's primarily used is astragalus, astragalus goes back thousands of years in Chinese medicine for adrenal issues, for immune system issues, for the liver. I looked at green tea extract and the ellagic acids and the polyphenols, antioxidants, but it's specifically been shown to have telomerase activity like Astragalus. Astragalus has two extracts, cycloastragenol and astragaloside 4 or astragaloside IV, these have specifically been shown to have powerful antioxidant activities, but also they have been shown to stimulate telomerase activity. And then, ginkgo. And we think about ginkgo for circulation to the brain. These mice, their brains grew 25% with telomerase activity. Well, I'm going to

give something that supports activity of blood flow to the brain, but also, ginkgo has been shown to have telomerase activity.

38:15 DM: Purslane. Out of all the plants and herbs that we were taught about, and all the plants on this planet, no plant has higher amounts of essential fatty acids naturally than purslane. Why we don't use it more in naturopathic practice, I don't know, I pick it out of my garden as a weed, and I throw it into my salads. Purslane is for essential fatty acids, Purslane has specifically been shown to have telomerase activity, but those essential fats are working on the cellular level to change the composition of cell membranes for transport of nutrients in and out of the cells. That's what we're taught from physiological mechanisms.

39:00 DM: Milk thistle has been shown to have telomerase activity, and what organ has to deal with all those environmental toxins we are dealing with, more than any other one? The liver. Supporting the liver, and how the liver functions and its efficiency to handle things. I'd put a Chinese herb called cynomorium specifically because of telomerase activity, cynomorium is a Chinese herb, and is primarily used as the elixir of life. It's a yang tonic that's been shown to help with testosterone levels in guys, and balancing female hormones and for infertility in women. It's a yang tonic. And so for sexual vitality, without having that nervousness that you get with taking caffeine and things like that, that people use to get that stimulation.

39:57 DM: Lemon. So the last two ingredients that I use as a green tea, the astragalus sambucus, ginkgo, milk thistle and then I put lemon in there, and I put lemon and Min-Col, which is calcium phosphate. Why calcium phosphate? Because calcium regulates mineral utilization and exchange of all

other minerals. But it doesn't mean you're going to take a calcium supplement because if your pH is high, you're taking the wrong forms of calcium, your body will deposit it in the wrong tissues, and you'll get calcifications and "death by calcium". There's books that are out there that say, don't take calcium supplements anymore. They're wrong, they're not looking at it electrochemically, but calcium phosphate, when you break down the composition of the body, when you go back to ash, is 60% calcium, 24% phosphorus, 12% potassium and a bunch of trace minerals, 85 trace minerals. Calcium and phosphates make up 84% of body composition, and where is that? Your bone it's calcium phosphate.

40:58 DM: And if you're too acidic, what are you using to buffer that acid? Calcium phosphate from your bone. I put calcium phosphate in there to work for those electrical channels, and I put lemon in there. Why? Lemon also not only has bioflavonoids, and antioxidants. Lemon, I explain, is that concept of Dawn soap which takes grease out of your way. Grease is cationic in nature, clumping. Anions, anionic surfactant, one drop of a soap, anionic surfactant, boom, it all disperses.

41:42 DM: All food that we eat is cationic in nature, except lemons, pure lemon extract. So I have all my clients drink a ratio one ounce of fresh squeezed lemon to nine ounces of distilled water, and that normalizes your pH as it stimulates digestion and works as an anionic dispersant when you eat. So at the end of your meals, we drink three ounces of that lemon water to disperse. I put lemon in VI-Telometry to disperse. And so when you're looking at it, what I'm doing is supporting the liver, supporting the brain, supporting circulation, supporting antioxidant activity, supporting yang and sexual vi-

tality and energy stimulation, and all of those are focused in on DNA and telomerase activity. That's the concept that came to my brain, because of our Naturopathic training, because of my compounding training, boom, I just started weighing things out and mixing them up, experimenting myself and saying, "Oh my God, do I really feel this much better?" So I started asking clients, "Would you like to try this?" They say, "Doc, you're asking me to be a guinea pig for you" I'm like, "Yes, I'll give it to you."

42:58 DM: And every single person came back like, "Can I have more?" And so I finally figured out the ratios, put it in capsules, gave it to people, they loved it. It took me another a couple of years in order to be able to afford the capital to put it together, and since then, we have about 65% reorder rate on it for after people have tried it. People love the product. I do want to offer for people who come to your show that they can use the discount code SPECTRUM, either on vitelometry.com, or if you go to docmisak.com, it'll link to it, you'll see vitelometry on there. And if they use SPECTRUM as the code, they'll get 10% off for trying it, and then I know that they've been listening and they appreciate what we have to say.

44:04 CS: Awesome, we really are grateful for that. How many do you take a day?

44:11 DM: I've formulated it and say you could take up to 12, but then I put it in bottles of 120, so if you take four a day, it'll do what most people want. Two either in the morning and two at lunch or all four in the morning. I take four in the morning, and then if I didn't get enough sleep or I ate the way I shouldn't have, I'll take another three or four in the afternoon. I'll take anywhere between four and eight a day, personally. I find that four a day, it's just amazing,

and I tell people, I'm not going to make claims, I'm not going to say that it's linked with your telomeres. But people say that it gives them mental focus and energy and that they no longer need their coffee every day. And I tell people, don't buy it from Amazon, buy it through the VI-Telometry. But if you go to Amazon and read the reviews, we've had 70-year-olds say that they get their sex life back.

45:14 DM: We've had people say that they're white hair turns gray again. We've had thyroid people saying that their hair is growing back in. Some of the stories that I get are just amazing, but I'm not going to say that it does anything. I'm just going to say, I did it based upon natural anti-aging science. I focused in on the science, I created a product that I find that people love to take.

45:39 CS: Thank you for sharing that with our audience and with me, I'm excited to get to know this as well, and what a joy to see the results that people are getting, how rewarding. I guess my closing question is, is there any telomerase or telomere testing on the market that is affordable and accessible for people these days?

46:05 DM: Definitely. Elizabeth Blackburn was one of the three physiologists, and she created the TeloYears, or something like that. And she does telomerase activity, but then they turn around and say, "Hey, do before and after testing and take our glorified antioxidant product and then test six months later" and they all see benefits. I tried to offer the same type of thing with my product and people don't follow through, is what it came down to. They don't want to do the testing, they just say, "Hey, I feel better." And so, we stopped marketing it as such, but TeloYears by Elizabeth Blackburn, basically, they'll give

you a DNA imprint of where you are based upon your telomere length, how it would age you. So say you're 50, and your telomere length says you're functioning as a 35-year-old or an 80-year-old based upon the stress. That's the best one out there that I know of. I know there have been other companies that are coming out. It costs probably about \$100 to test your telomere length.

47:28 CS: That's not bad, and really motivating too, if your telomeres are older than you are, right? A motivating factor. Well, this was so insightful, so many great pearls and so much great knowledge. I appreciate your time and all the work that you're doing and in closing, can you just share your website again, Dr. Misak, so people can find out more about you and your work?

47:53 DM: Everything that I do is on docmisak.com. If they want to learn about Vi-Telometry, it's vitelometry.com. And if they use discount code SPECTRUM, they'll get 10% off on any purchase.

48:17 CS: Awesome. Well, thank you for your time and again, it's a pleasure knowing you and I'm looking forward to learning more about your work and trying out your product, so thank you so much.

48:26 DM: Oh, you're welcome. Thanks for having me. It's always fun. What a pleasure.

48:29 CS: Thank you.