Food-Based vs. Synthetic Supplements
Guest: Mike Mutzel

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Wendy: Hello, everyone. Wendy Myers here from live110.com. Supplements are essential for health given most people's poor diets and poor soil quality. That's why I brought together all of the health experts for the Medicinal Supplements Summit because I'm committed to helping you experience vibrant health by making the right supplement choices. Today, we are going to be discussing a hotly debated topic in this supplement world regarding food based versus synthetic supplements, which one should you be taking? Are food based better? Are synthetic harmful? Find out.

Our guest today is Mike Mutzel. He has a B.S. degree in Cellular Biology from Western Washington University and an M.S., a Master's in Nutrition from the University of Bridgeport, Connecticut. He has completed the Applying Functional Medicine and Clinical Practice course and all six of the Advanced Practice Modules at the Institute for Functional Medicine.

Since 2008, Mike has broadcasted hundreds of webinars and video interviews on the latest integrative health developments and regularly speaks at seminars throughout the US, Canada, and Asia. He is the author of *The Belly Fat Effect*: *The Real Secret About How Your Diet, Intestinal Health, and Gut Bacteria Help You Burn Fat.*

Thank you so much for joining us on the summit.

Mike: My pleasure. Thanks for the invite.

Wendy: Why don't you tell listeners a little about yourself and your background?

Mike: Yeah, for sure. So since 2006, I've been in the professional supplement space working for two different companies. One was with Biotics Research for about four years, and then up to now and I currently work for XYMOGEN as an independent consultant. So that's what I've been doing. XYMOGEN is one of the leading practitioner brands. They're I think $80 million in revenue annually.

So they actually have a whole suit of health formulas that they make just for health care practitioners but they also actually manufacture for other nutrition companies, which is really unique. So they have one of the world's most state of the art manufacturing facilities. It's humidity controlled, two-story gravity feed.

These are all these bells and whistles we can take a deep dive into, but they are an awesome company. So I learned a ton. I get to see all the raw material procurement, testing, quality, finished product packaging, all those different aspects that a lot of people in the industry don't really get to see, because they just get the research and literature from the company or they actually have another company package their materials.

So there are a lot of nutrition companies, very few nutrition companies that actually manufacture and have their own line, so that's really unique. I mean, Wendy, you and I could start our own nutrition company today and we don't need to build a manufacturing company. We can outsource that or use a contract manufacturer. And so it's really unique to be working alongside a primary manufacturer, because you get to see all behind the scene stuff.

Wendy: Yes. And XYMOGEN, they're a very well respected company in this space. So let's talk about the big controversy surrounding food based versus synthetic supplements. Can you talk a bit about that?

Mike: Yeah. I mean the food-based thing has been around for a long time, I mean, starting with Royal Lee back in Standard Process days, right? Look, I have a huge organic garden in my backyard, seven 4x8 raised beds, a bunch of raspberries, a bunch of stuff. I'm all about real food.

But the thing is, is like if you look at these food based supplements, you see very minute factions from whole food. What you often see is buckwheat powder, alfalfa sprouts, and wheat germ agglutinin and wheat germ products. So that's like, really, the major constituents of the whole food component. Then you see synthetic vitamins like folic acid, cyanocobalamin for the B12, and other nutrients.

So my whole stance is, look, get the best of science and nature. So why not find extracts from whole foods that are hard to get in your diet like micronized

diosmin and hesperidin for example. This is a product that's actually a drug in Europe. It's really good for hemorrhoids, varicose veins, and spider veins. So taking compounds that are hard to get in your diet and/or compounds that are not really well absorbed and getting those in their supplemental form. There are green strings on the market. There are red strings. But it's like, you can get all that from real food really easily.

So supplement with things like zinc, selenium minerals like you talk about a lot, Wendy, because let's face it, our soil is depleted. A lot of people don't grow their own food. They don't add calcium, nitrogen, and minerals back into their soil and so forth. So I'm a big fan of just eating a whole real food diet and taking the key nutrients that are needed for whatever specific condition you're working on.

Whether it's blood sugar support, depression, sleep issues, you're trying to build muscle and burn fat like take amino acids, for example – and let me just pause, a lot of this "synthetic ingredients" are actually made from bacteria. It's not like they're just some guy in a lab just mixing these things together. Literally, they are made from bacteria then they just splice them off, like those splice off methylcobalamin for example from a bacterial fermentation process. So that's really where you hear synthetic versus whole food.

The whole food stuff, it's really hard to get super physiologic levels of magnesium from like broccoli powder pills, for example to give you an idea, right. The argument for the whole food camp is that there are other micronutrients and, say, their components and constituents and a whole food component and that if you're just looking for magnesium or B vitamins, for example.

But you're not getting that if you take the isolated nutrient derived from a bacterial fermentation process. I totally get that. That's why we eat a lot of whole real food because there are certain phytonutrient aspects and maybe energetic components that we can't even quantify or measure at this point. But I still think eat a real food diet and supplement with what you need specific for your condition.

Wendy: Yes. That's a very, very good point. So with the food based supplements, what are some of the pros of taking a food based supplement? Then we'll get into the cons.

Mike: Yeah. Well, I think it really comes down to what ingredient are you looking for? What you are trying to do? For example, there are some really cool food-based compounds like sulforaphane glucosinolate, also known as SGS, study from Johns Hopkins. So this is actually a broccoli seed derivative that's

been shown to turn on anticancer, antioxidant phase II detoxification enzymes that's really protective against breast cancer for example, that's really helpful in the context of upregulating cellulitic glutathione. So I think that's a whole food kind of ingredient that you can use in a supplemental regime to help decrease your risk of breast cancer, prostate cancer, or increase glutathione production and so forth.

But to get sulforaphane from broccoli, you need to have like two cups of broccoli. You need to have a lot. So I think supplementing with something like a whole food ingredient with a real food diet is going to get the best of both worlds, because you're getting more sulforaphane than you would normally get from a real diet. But it is still a whole food based product.

So what I think people should shy away from is when they go to grocery store and it says a whole food multivitamin and they look at it. They look on the back. There are still tons of synthetic ingredients in there. All the B vitamins, magnesium, and so forth, a lot of that is added in to a base of whole food whatever it is. In one company it's, like we mentioned earlier, alfalfa or wheat germ or something like that.

Other companies throw in some phytonutrients from pomegranate and berries and stuff and I think that's helpful. But again, you can take the multivitamin without having to get it from a whole food source because they're adding in those synthetic compounds anyway.

So in my opinion, I think a lot of it is marketing. And I could be wrong on some of that. I haven't followed all the trends in the last six months. There are always new companies coming out. But I think I like to just be discerning when you're looking at the label. And so don't pay extra money for "whole food" product if you're getting all those synthetic ingredients in there anyway, that you would get from a normal manufacture.

Wendy: Yeah. And I've heard there are different levels of food base. Like there's true food based and there is the food base with the synthetics added in. And so you definitely have to read the label and you have to know what you're looking at.

So there are lots of, like you're saying, they have the B vitamins that are synthetic that are added back in. So you have to look for the B vitamins that are produced from yeast. Those are going to be the food based ones. So you kind of have to know what you're looking at.

Are there any brands that you recommend for the food-based supplements?

Mike: There are only two companies that I know of that I'm aware of. So there's Innate Response in, I think, Vermont and then there's Standard Process. And again, so I look at their marketing materials and on their website it's all this food based, food this, and then you look at the ingredients and then you see like alfalfa, buckwheat, and then all the synthetic stuff. So I'm kind of wondering about that.

I can't really personally vet or verify that I like one whole food company over the other. Like I said, I would just make sure that these companies are checking for mold, that they're doing quality-controlled dissolution testing; that it's an FDA registered facility; that it's NSF GMP, so the National Sanitary Foundation third party tests.

Like if you and I are manufacturers, we could voluntarily have NSF come in and check our facility to look for our cleaning procedures, to make sure that we're not cross contaminating casein and gluten and other allergens with multivitamins that say gluten and casein free for example, because that's a common thing that you see in the industry.

So that's what I would want to look for. If someone is like, "Okay, I really like the concept of whole food nutrition," just make sure that it's TGA, Therapeutic Goods Administration, that's like the FDA in Australia; NSF, National Sanitary Foundation; and FDA registered and audited facility. So if they have those three criteria, then they're probably doing great quality control.

So the product that you're getting is probably really clean. They're testing the raw materials to make sure there are no heavy metals and contaminates: Benzene, toluene, different solvents and surfactants that do come up in the manufacturing process and the raw material procurement process.

So I'll just make sure that those companies, if you really want to get a whole food product, that they meet that criteria.

Wendy: That's a good point you brought up is the mold, because a lot of food-based supplements can contain mold. They're food. They can have mold that grow on them. And that's one of my big beefs with products that have algae and just the algae products, the spirulina and whatnot, they can go rancid very quickly. Can you talk a little bit about that con part of the food-based supplement?

Mike: Yeah. I think that can be in any supplement, really, I mean just looking at the moisture activity. So that's why it's really important to know who you're dealing with. So what I like to encourage people to do is just really vet the company they're going to work with. Whether they are an end user or a practitioner, go and audit the company. Just go in for a tour. Most companies,

if they're transparent about what they're doing, will give you a tour. And they should be proud to do that because they have a unique process that allows them to differentiate themselves in the marketplace. So I'll make sure to vet them that way.

Yeah, mold is really a big deal. So mold, heavy metals are a big thing, microbial activity in general. So part of the CFR 111, these are the new manufacturing guidelines for nutritional manufacturers, have to do microbiology testing after they make a lot. And so it's part of the CFR 111 like what I was saying, so they look at yeast growth and microbial growth. And I can't remember the units but it has to be under a certain, I think, it's like 0.08 CFU per gram or something like that.

So again, companies that are following new FDA good manufacturing, CGMPs, they are called Current Good Manufacturing Policies, should be looking for this microbial growth. And so it comes down to really moisture activity in the bottle, in the product. And so that's one way that the whole food "products right." They do have a lot of moisture because plants and vegetables in their cell wall components just inherently have a lot of moisture. So you could have that activity. So it's something to just keep in mind.

Wendy: Let's talk about some of the pros and cons of synthetic supplements, that they obviously do work. I mean they do raise our levels of nutrients in our body. Can you talk a little bit about those and their place in someone's supplement regimen?

Mike: Totally, yeah. I mean there's a lot of great research on magnesium oxide. So this is something that you're not going to find in nature. Great research on muscle cramps, zinc oxide and iron, various forms of iron and iron sulfate for example and so forth. So these nutrients do get in there and that's the whole point to kind of bring this up is there's clinical research even on synthetic vitamin D made from sheep's wool, where they literally irradiate sheep's wool to get vitamin D and then they put that in a supplement. So a lot of these nutrients that the whole food camp says, "Oh, they don't work. They don't do anything." There's published research in nutrition journals showing that just synthetic iron, given to preemie babies that are anemic or women, actually raises serum ferritin and serum iron. So they do get in there. Ideally, would it be great to get liver from grass-fed organic cow and so forth to get iron for example? Absolutely, but in a supplemental form.

So again, it comes back to why are you taking the supplement? Are you depressed? Are you anxious? Are you trying to put on muscle? What is your goal? Don't just take a bunch of supplements because you heard they were good for you or you read an article or watched Dr. Oz. Like really work with a

practitioner and be more science based about it. So some of my personal favorites of the "synthetic category," if you will, magnesium as I mentioned before; zinc is amazing. I mean there are so many different things that you can articulate about magnesium and zinc, I'm sure much better than I can, Wendy.

But myo-inositol is another B vitamin that's derived from bacterial fermentation that I think it's really important for women to take. It has some great properties like blood sugar regulation. Sleep issues, affecting the brain and brain-derived neurotrophic factor and neurologic function and capacity, all the adrenal kind of adaptogens and so forth, Ashwagandha and various forms of those herbs and their standardized extracts, I'm a huge fan of. And again, that could be considered like a whole food derivative. We're not taking the whole ashwagandha leaf. What we're doing is we are isolating the withanolides and the different bioactive components, so that it's more physiologic, has a better function in our body when we take it as a supplement.

Wendy: That's what they do with turmeric too, with the curcumin. We take out the curcumin and is it a food-based supplement anymore? I don't know.

Mike: I think so. You're just optimizing the bioactives have known health effects and then we're doing something to make the bioavailability better. For example, one of my favorite forms of curcumin, since you mentioned it, is BCM-95. And what they do is take the emulsified essential oils from the turmeric and mix it in with the 95% curcuminoids, and that creates a whole food-like substance that's just optimized. So it gets better bioavailability instead of just the straight turmeric root that you might get at a health food store. So that's one thing.

Yeah, I think all the B vitamins are beneficial. Quatrefolic for the 5-MTHF, so that's going to be the bioactive form of folic acid. Cyanocobalamin, I'm not a huge fan of. I like methyl B-12. MeCobalActive is actually a raw material from Spain that has a lot of great research. It's very clean and highly purified form of B12 that I like to promote and have people look for on labels too.

Wendy: And so why do people want to take the synthetic B vitamins? I mean I'm assuming because these people can't absorb, a lot of people can't convert a food-based B vitamin, they can't convert it to a methylated form, which what the body uses. Can you explain that a little bit?

Mike: Yeah. So when you take a compound that's all ready – it's like putting in a spark plug. It's plug-and-play. The liver doesn't have to do any conversion. There is no necessary metabolic aspects or conversion in the GI tract. It's just ready to go. For example, if you take food-based folates, they

still need to undergo some sort of methylation to become 5-methyltetrahydrofolate, which is what's going to participate in the enzymatic functions involved in methylation. So if you're going to take a supplement, you might as well take like the derivative that's going to do stuff instead of hope your body converts it into something else. For example, NAC, N-acetyl cysteine, common precursor, one of the three precursors to make glutathione, the glutathione tripeptide, you have to take a lot of NAC to raise serum glutathione. In fact, it's 131 mg/kg. So you think about that. You're like "Okay. That's like 13 grams for the 150-pound person. That's a lot of NAC." Whereas, if you could just take a bio-optimized glutathione instead because you're trying to like quench free radicals and help with detoxification. You might as well just take the compound that does the stuff instead of hope your body converts it.

So those are some examples but it's really important when it comes to supporting methylation, as you probably know. I mean more than 50% of the adult population has some sort of aberration in their ability to take a food-based folate and turn it in to 5-MTHF. And then you have B12 and TMG and all these betaine, SAM-E. There's a whole bunch of different pathways that are linked to 5-MTHF. So we really need that. Ben Lynch is an expert on that, which he can articulate more so than I can.

So my opinion is if you're one of this people with SNIP, single nucleotide polymorphism, I think get leafy greens, get methylation support and donors in B vitamins from greens for sure. But if you're symptomatic, if you're anxious, depressed, not sleeping, you have hormone issues, mood issues, then just take a little bit of the stuff that has been shown to be effective, which is the 5-MTHF or the methyl B-12.

Wendy: Yeah. And that's what I wanted to do this summit is, yes, food based supplements are fantastic and they have amazing benefits. A lot of the cofactors needed to absorb certain nutrients that are not present in synthetic supplements. But when it comes to B vitamins, I personally think a lot people need to take the synthetic methylated forms.

So let's talk about the gut microbiome and probiotics. You talk a lot about probiotics and their importance and you're an expert in the gut microbiome. So let's talk about how your gut bacteria play a role in your health.

Mike: Yeah. That's a great point. So one of the fastest growing categories of supplements right now, Wendy, is probiotics because of all the research on the microbiome and help me understand that these microbes play a huge impact on our immune health, our metabolic health, they help with detoxification and everything else.

But here's the thing about probiotics when it comes to a supplement, I like to encourage everyone to look at the strain. So, Wendy, you and I are both are homo sapiens but we're totally different. You're a woman. I'm a man. You have blue eyes. I have brown eyes, right?

And so probiotics are the same. Even though you take Lactobacillus acidophilus, there's Lactobacillus acidophilus La-14. There's Lactobacillus acidophilus DDS-1. There's Lactobacillus acidophilus NCFM. There are probably 100 different sub-strains for any given genus and species. And when I say genus and species, that's Lactobacillus acidophilus, genus species. That's Bifidobacterium lactis.

So we need to start looking at our probiotics from a strain-specific effect. No one would go to the pet store and say, "I just want a dog. I want a canine. I can remember the genus species of a dog. I can't remember but it's canine something." You would never do that. You would say, "I want a black lab or I want a chocolate lab or I want Doberman pinscher," something like that. We get more specific. So when people are looking at probiotics in particular, if your probiotic company doesn't tell you the exact strain, then get a new probiotic. That's my number one advice.

Number two advice for choosing probiotics for your health is if it has a prebiotic in it, it's probably not very effective. So we know that prebiotics are the fuel for the probiotics and that's all good. But as we are talking about whole food supplements, the food based supplements and moisture and all that, inulin and FOS to prebiotics have a lot of moisture activity.

So when they're in the same bottle or powder or capsule as a probiotic, they're going to react. And you're actually going to lead to degradation of the probiotic overtime. And now, I know that from working, again, with the manufacturer who used to have that. We realized that, hey, our expiration dates are not meeting – they're not hitting all the time. They're inconsistent. And it's the moisture activity of the inulin and the FOS.

So that's tip number two is make sure you definitely – I love inulin. I take supplement with inulin. We put that in our cookies and brownies every time we have a treat in our house a couple times a week. We don't use sugar. We use inulin, which is prebiotic because that's great for the microbiome. There's a lot of good research on supplementing with inulin and reducing body fat percentage and increasing bacterial diversity.

So that's important. So that's where it kind of brings up this whole what's popularized right now is these soil-based organisms for probiotic. We hear a lot of people say, "It's so wonderful. We're not getting enough soil on our diet.

No one grows their own vegetables, so why not supplement with soil based organisms?"

As I mentioned earlier, I do a lot of organic farming here in my house and so forth. When I get fertilizer, I noticed they're loaded with the same soil-based organisms that a lot of companies are selling in their capsule product. And you get 250 billion CFU per tablespoon of soil amending material. So it's really inexpensive. There are trillions of microbes in the soil amender that you can get at various gardening shops.

And I think it's good to get a little soil in your diet. I don't really recommend people to supplement with a soil-based probiotic. Here's why. Most of the genus of the soil-based probiotics that you're going to find in the supplement come from bacillus. So there's a lot of research on how bacillus makes biofilms. Biofilms are generally considered not to be healthy because they can create a region where the immune system can't target it, Lyme and other bacterial pathogenic bacteria and microbes that can habit the biofilm. Bacillus also makes a lot of antibiotics for example.

So that's kind of interesting that we see this increase rise of antibiotic resistance and I'm not attributing it to soil-based organisms at all. But we don't want to contribute to that by supplementing with that. We don't really know. And you don't get the strain, you just get the genus species. There's no strain on the soil-based probiotics that are in the marketplace right now.

So they're just like thrown in homo sapiens out there. Good homo sapiens or bad homo sapiens, right? We're just throwing out the bacillus and these other "soil microbes" but we have no research on their safety, their efficacy. Are they resistant to stomach acid, bile? How well do they colonize? Which cytokines of interleukins do they increase or decrease? We don't know any of that with some of these nonstudied strains.

So to finish this discussion a little bit, look for a probiotic that's free of prebiotics and also has the strains, so genus species strain.

Wendy: Yes. And I have heard that the probiotics you want to look for, they have the strain. There's number next to them. Those are the clinically proven strains that you want to be looking for on the label.

Mike: What's unique about that is most often those strains have research. So you can just go into PubMed on your cellphone and type in Lactobacillus acidophilus La-14 or Lactobacillus plantarum 115 and you can pull up safety data or research data. And you can find, is it, again, going to cause my autoimmune flare-ups to increase or decrease? It will be helpful to know that. And so that's why most companies, when they are formulating a probiotic,

they look at that research and vet the research and make sure that they're not going to be causing more harm than good. Because even probiotic bacteria can actually increase bad or not desirable interleukins and cytokines, right? So we don't want to do that, really.

Wendy: Can you recommend some probiotics, brands that you really like?

Mike: Yeah. The one that I like is XYMOGEN. They have a ProbioMax 350. And at the time of manufacture, there are 650 billion colony-forming units. And what's unique about this product, why I like it so much, is it has all the strain specificity and they list how many CFUs from each strain is on the label. So for example, the Bifidobacterium lactis has 30 billion CFU. There's, I think, I can't remember exactly, over 19 different strains in there. So you know exactly which ones are there at the different levels. So I really like that.

Wendy: Yeah. Most companies, they just list 50 billion per capsule. But you don't know how much of each individual strain, Lactobacillus or Bifidus, is in there.

Mike: Yeah. It's a way to kind of keep your ingredients proprietary. That's one way. But also if you know that, like for example, certain strains are really expensive like $25 a kilogram. They're really pricey and so you can put in a lot of cheap strain and just a little bit of the good high-end strain. But if you wrap it into a proprietary blend, then no one knows how much of which comes from and you're more profitable.

So what I really like about this strain specificity and listing out how many CFUs per strain is it's really transparent. If a competitor wants to copy it, fine, they can copy it. Who really cares? But at least, the end user knows what they're getting. I think that's really important because, say, someone with autism wants to look up Lactobacillus reuteri, for example.

And they see that clinical studies at 20 billion CFU were effective and they just pull up this probiotic that has a proprietary blend, they don't really know. So if they want to match what the science is showing, it's really important just this transparency in labeling, and so that's why I am a fan of that.

Another one, in particular, I like is Saccharomyces boulardii – I was getting tongue twisted with Streptococcus thermophilus, which is also a beneficial bacteria to look out for because it's anti-inflammatory. But Saccharomyces boulardii probiotic yeast has a lot of wonderful research on increasing good immunoglobulins in the GI tract and turning down the inflammatory response. So that's a really unique probiotic yeast that often gets lost in this whole discussion of probiotics but has a lot of research, and so I highly recommend that one as well.

Wendy: Yeah. I like S. boulardii. it's yeast that eats bad yeast. So that can be very helpful. I think it will help with problems with Candida and whatnot, which is a bad yeast.

Can you talk a little about Kombucha and other probiotic drinks that contain S. boulardii and if you think those are beneficial?

Mike: I think they're awesome. After I found out that those drinks can erode the enamel on your teeth, I don't consume them as much, but at least three days a week. If you can make your own Kombucha, make your own sauerkraut or kimchi at home, that is awesome, probably way better than – or a great synergistic adjunct to probiotics. But I think they're really good. Just make sure after speaking with a dentist, make sure that you rinse your mouth after you have Kombucha because of the acidity.

And so what's unique is – I go to Canada quite frequently and they have this KeVita drink, which is I think from kefir grains. Because Health Canada makes you list things a little bit differently on the label, I think each bottle has one trillion organisms.

Wendy: Wow.

Mike: Yeah, a trillion. So it's a lot more than you're going to get even in a whole bottle of retail probiotics. So these things are loaded with bacteria and I think they're great to throw in there in a post workout situation. Just make sure that you're looking at the sugar content, because sometimes they do have cane sugar in there and a little bit of added sugar.

So if you're having 14 grams of sugar, it doesn't matter how much beneficial bacteria you're having, that's going to put your blood sugar response and all that. So just make sure that when you're choosing between Kombucha and Synergy, there's a different one. One has more sugar and not. Just look for the lower sugar variety and switch it up different flavors.

There's an original flavor that they make of Kombucha that has turmeric and curry in it. It's really yummy. I don't know if you've seen that one, Wendy. That's the one I personally choose and then I'll get the ginger one and switch it up. And then the KeVita I really do like because that actually has more bacteria than yeast, which I learned recently.

Wendy: And that's more like a coconut and kefir correct?

Mike: Yeah. And they have coconut and kefir grains too as well.

Wendy: Yeah. Do you have any tips for the listeners on how to take probiotics like when and how much, etcetera?

Mike: Great question. The science used to say take it away from food, you have better absorption. New research shows that you can take it really anytime of the day but take it with food because you get 10% better uptake. But again, if you're getting a science-based probiotic, these strains, generally, have been shown to be resistant to stomach acid and bile and some of the caustic aspects of digestion. And then also, there are acid-resistant vegetable capsules that a lot of companies are using now to help with the absorption of their probiotics. So they're surviving the stomach acid.

But I would say anytime just take it when you – the best time to take it is when you remember it. Say, people take it at night, then they forget about it, then, "Oh, I skipped a day, whatever," just take it when you remember it. If you're taking antibiotics, take it four hours on either side of the antibiotics. So if you have antibiotic first thing in the morning for a procedure or whatever, you can take your probiotic about four to five hours later.

Wendy: Fantastic. Well, Mike, thanks so much for joining us on the summit. I really, really appreciate it. You're very, very knowledgeable. I know you've been working on the practitioner side with XYMOGEN for many, many, many years. So it was really a privilege to have you in the summit.

Mike: My pleasure. Thanks for the opportunity, Wendy. Happy to be here.

Wendy: Why don't you tell the listeners a little bit more where they can learn about you and what you do?

Mike: Yeah. I have a podcast at highintensityhealth.com. So folks can just type in Google 'high intensity health' or YouTube. Check out some of the video interviews that I have and so forth.

Wendy: Fantastic. Well, thank you so much, Mike.

Mike: My pleasure.

Wendy: Everyone, thank you again for joining us on the Medicinal Supplements Summit. I hope today's talk helps you to clarify if you should be choosing either food based versus synthetic supplements or be taking both if that works for you. My aim with this summit is to help you clarify the exact supplements that you need to be taking for you as an individual and, essentially, how to customize your supplements. Thank you, again, for tuning in.