Podcast Introduction and Guest Welcome

omega-3 fatty acids, vitamin D3 with K2, a pre and probiotic, amethylated multivitamin, and probably a combination drink of collagen and creatine, which we didn't even really discuss.

But creatinine is without question a huge nutrient. When I graduated Cairo School, my thesis was on creatines. Really? Yeah, believe it or not. Creatine for muscle hypertrophy and recovery.

Look where it's gone. Yeah. It's going to brain health for sure. Yeah, so I think the big creatine question, we'll answer that before we close, is how much creatinine?

Well, five grams is great for muscle recovery. Ten grams, it's great, for the brain because the first five, grams go to the muscle. The next five grams go through the, brain, because, the muscles real greedy.

So, you got to make sure you feed the the mussel first. If you have a neurodegenerative disease, maybe 10 to 20 grams. Do not, do not do, not take creatine with caffeine or hot egg with solution.

It breaks up the molecules. If you're a female, make sure you are on the upper levels of taking creatinine supplementation as compared to males because you don't have as much muscle mass, so you do have much creatines storage space.

Hi and welcome to the Lime Bites podcast, where we shine a light on the misunderstood science of Lyme and other vector-borne diseases, as well as the truths that many still miss.

I'm Dr. Mariah Hinchey, naturopathic physician and fellow of the Medical Academy of Pediatric Special Needs. I specialize in treating chronic Lyme disease, as well as other complex inflammatory conditions.

In this podcast, we break down what's working and what is not. We share the facts that most people miss, challenge outdated thinking, and give both patients and practitioners the tools to heal smarter.

So let's get into it and change the way we heal Lyma. Welcome to another episode of the Lime Bytes podcast, Rebuilding Immunity, Reducing Inflammation, and Redefining Recovery.

Defining Longevity and Healthspan

I'm your host, Dr. Maria Hinchey, naturopathic physician, founder of Tao Vitality and Lyme Core Botanicals. Today, we're stepping back to look at the bigger picture, because true healing isn't just about surviving disease.

It's about building resilience, preserving brain function and creating the foundation for a long, vibrant life. We're talking about longevity through the lens of functional medicine, exploring the gut-brain connection, inflammation, mitochondrial health, and the everyday strategies that help us not only live longer, but live better.

Today's guest is Dr. Robert Silverman, an internationally recognized functional medicine expert, chiropractor, clinical nutritionist, bestselling author, and founder of the Westchester Integrative Health Center in New York.

He's the author of Immune Reboot, and Inside Out Health and is widely known for his work in gut health, neurodegenerative disease, human performance, and innovative therapies that support healthy aging and longevity.

Welcome Dr. Silverman, thanks so much for joining me. Thanks so for having me, I really appreciate it. I'm excited to share some knowledge bombs and really have a good give and take with you.

Right back at you. When people hear the word longevity, they often think simply living longer. How do you define longevity from a functional medicine perspective?

Well, I don't look at longevity as just living longer. I look as longevity is the idea of healthspan, how well you live those years. So my goal isn't to add years just to your life, it's to life to you years, that's the big takeaway.

Healthspans, to avoid chronic disease, 76.4% of Americans have a chronic six out of 10 Americans have two chronic diseases. I mean, the numbers are horrific.

So we want to add that idea of what I referred to as healthspan. And Marcel, that health span, a new idea is peak span. Which is a period in life during which we sustain at least 30% of our peak function.

and the idea of a given domain. So we have these different systems that are asynchronous. And it's fascinating, you know, at 60, virtually every system I'm on the downward trend.

It's heartbreaking. The only one that you can conceivably add to is crystallized intelligence up to about 80. I want to push that. So the idea of longevity, how long you live, health span, How well you Live, vitality, and how much you enjoy and How long we can do our peak span.

You know, 90% of our 100% like testosterone at 21, that strong gentleman. So I think longevity has taken the world by storm because everybody not only wants to live longer, they wanna live better and they want to look better.

Yeah, absolutely. So you frequently discuss the hallmarks of aging. Can you explain what you mean by that to our listeners, what they are and which ones we can actually influence through both lifestyle and nutrition?

Absolutely. What a great question. When we talk about the hallmarks of aging, we all go back to like a 2013 study. And I took a little creative license with it.

The first thing we want to talk is immune reboot. I thought so much about The Immune System, I wrote a book in 2022 called Immunereboot, the idea of immune health, immune rejuvenation, and immune resilience.

Hallmarks of Aging and Immune Resilience

Those are words that are resonating with you because as the lime queen, you talk all the time, because obviously if someone were to contract Lyme, L-Y-M-E, little inside joke that we talked about before.

Not Limes. That Lime's and it comes from old Lymen, Connecticut. I think it's actually exit 74 and 75, if I remember correctly, when I went to Bridgeport and I took the drive up.

I don't remember the exact exit, but yes, it's right around there. Right. It's up that way. So the idea of immune health, immune balance, immune support, and immune rejuvenation, the ability of our immune system to be flexible.

If I could correlate it to like a basketball player, his ability to move his feet on a basket ball court. You have a bacterial infection and you get an antibody, you have to get a cousin to that bacterial infections and the immune systems able to ward it off.

you now have immune resilience, kind of like Lyme and co-infections, if you will. All right, you can track Lyne, but look at all the co infection. Isn't that where you have that precipitous drop in health?

It's like more straws in the camel's back, right? The more weight on the immune system, the harder for it to function properly. Absolutely. So I'm a big believer in managing and modulating inflammation, and the idea of chronic inflammation.

I think COVID, if I could use that term, I am allowed without getting speared, It taught me a couple of things. Taught

me two things, one, everybody's crazy, or at least half the world's, crazy and the other half of the worlds a little crazier.

But what it taught was that everybody, our patient base is pre-inflamed. Patients walking in in your office, in my office because we both have clinical practice, people are inflamed, they're too inflame.

That's where the idea of that cytokine storm was. So my mantra is to manage and modulate inflammation. The microbiome, oh, I think I could be here for three hours talking about the microbiomes.

I believe that the gut microbiom is the epicenter of your health. 80% of immune cells are in your gut. It's where your macro and micronutrients are absorbed.

That's not the only microbioma we should talk about. We should talked about that gum microbiol. Look how close it is to the brain, hinted. So the gut to gum to brain microbiome is a conversation piece.

Mitochondrial dysfunction is another hallmark of aging. Number one complaint in a doctor's office, patients complain about it all the time, 80% of them do.

It is fatigue. That is mitochondrial dis-function. Mitochondrial dys- function is the backbone of many of our neurodegenerative diseases. I am sure that you can make a glowing case and maybe we should delve into that even though you asked the question, mitochondria dysfunction from Lyme disease, what do you think?

It's very commonly seen and I think it's at the heart of why and how these infections become chronic despite the boatloads and combinations and long durations of pharmaceutical antibiotics or even herbal antibiotics for that matter.

You know, when the cell is being or get stuck and doesn't exit out of the cell danger response, you have that dysfunctioning cell, dysfunction in mitochondria.

A lot of times these organisms, well, not a lot times, all of these times are robbing our nutrients. not only our micronutrients, like our vitamins and minerals and things like that, but, you know, they're causing excessive oxidative stress and they are using up our antioxidants and then they breaking down the phospholipid bilayer of the cells and robbing our phospho lipids that are crucial for our cells to function properly, as well as, for the mitochondria to functioning properly.

And so, we get stuck in this really terrible place of cellular and mitochondrial dysfunction, and it doesn't matter really what you're giving the patient, especially if you are just focused on killing the organisms, they're not going to be able to respond to or deal with the treatment.

So with a lot of this complex chronic illness, specifically vector-borne disease, it starts out with actually getting the body to calm down, quelling the inflammation, giving back the nutrients that the cells in the mitochondria are missing to be able to function properly.

And not just dumping in NAD and CoQ10 and things like that, but actually looking at the mitocondrial membrane and the cell membrane, because you can put whatever you want into the buddy, But if it can't get into cell or into mitochondrion, then how are you supposed to use it?

You just added a myriad of great points. Number one, the ability to get through the cell membrane, alpha-lipalk acid, omega-3 fatty acids. If you can't pierce the layer, if it's not bi-directionally got a problem.

But mitochondria itself, and I know we're trying to talk about the hallmarks of aging. When you think about it, everybody thought mitochondrial was just ATP.

in the production of ATP, but cell danger response implies, look what it does, it also has an immune function. It's also a key cellular signaller throughout the body.

So mitochondrial dysfunction is all systems shut off for the Something that I like to talk about that also communicates to the body is like fascial injuries.

Fascia is the saran wrap of the the bodies own wetsuit. It's kind of, the best way to describe it is I take a chicken breast and I pull the skin apart.

There's that muscle, there's the skinny and that white film. That's fascia, it's our own tensegrity. Now you as a naturopath, you talk a lot about fascias.

The chirals that have been a little later to the game on that, and I can say that because I'm a chiropractor. In addition, vagus nerve, we could have a whole webinar just on vaguus nerves, cranial nerve number 10. When I graduated Bridgeport 27 years ago, I knew two things about vagous nerve.

It was cranio nerve 10, it was parasympathetic. Man oh man, has the data really added to that kind of concept. Vagus nerve goes from the medulla oblongata, the brainstem, down through the transverse colon.

It is the neuronal communication between the gut and the brains is one of the main reasons for the guts-to-brain axis, which I like to refer to as the superhighway to health.

So if you could make a positive effect on a vagus nerve, you're going to be in a rest and digest and a wine and dine situation. Wouldn't you say most of your patients are sympathetic-oriented or sympathetic activated?

Absolutely. I'm sorry. No, I was just going to say many because of just having a chronic illness is already going push you into sympathetic dominance, but with the amount of gaslighting and Just I think that worry, you know, that something's dreadfully wrong with me and nobody can figure out what it is.

Inflammation, Mitochondria, and the Gut-Brain Axis

And I've been given X, Y, and Z diagnosis and it doesn't resonate with them. Like that alone, I thing, is enough to get someone stuck in sympathetic dominance.

I mean, just look at our world. Look at all of the EMFs. constant pinging from text messages and emails and alerts from social media. It's like the modern world is literally keeping people in this sympathetic dominance, always on, Yeah, parasympathetic would be a great choice because it's a balancer, that autonomic nervous system.

So many doctors' offices that I go into visit, I see the muscle guy. You see all the muscles, you know, the atlas. you see, The nerve guy, but how many do you See the autonomia nervous System, which is a balance between sympathetic and parasympathy.

It's like a seesaw. so everybody sees it on levels, with sympathetic being too high and parasypathetic being to low. You want to be able to kind of like equalize that if you can.

Another hallmark of aging, and I know you'll love this one, is the loss of muscle mass, sarcopenia, as well as the lost of muscles strength, dynopenia.

Gabriella Lyon has done a great job by saying that muscle is a longevity organ. I like to refer to it as a currency of longevity. But it's not just muscle-mass.

It's more so than that, it's muscle to fat ratio. And some great tests that you can do in the office to really test for loss of muscle mass or muscle mask would clearly be a grip strength.

Just shake somebody's hand. Stop asking people how much they deadlift and how they bench press and many push-ups they do. You're tall, if I get my wife who's not quite as tall as you.

She's got a lever advantage, but you've got to leverage advantage on a volleyball quarter in a swimming match and

stuff like that. So shake the lady's hands, shake, the gentleman's hand, see what maximum grip strength that you have.

And lastly, for me, a hallmark of aging is what I like to refer to as dysbiosis. the unleveling of good and bad bacteria, did you know that you needed about 85% good bacteria not to have dysbiosis, which may be the one constant for all the unsettling in our gut?

And getting back to muscle mass, the zeitgeist in modern health is clear. Muscle has become medicine. Yes. So what does that say for these Ozempic users?

Uh, you know, it's funny, we're talking about the GLP one. Yeah. I mean, if you're really looking at longevity. If you're going to do a GLP-1, you clearly need to incorporate lifestyle.

You clearly to need incorporate muscle activation. So what about all of the people who are on GLp-ones? How is that actually affecting their longevity by decreasing muscle mass if they're not doing all the things that one should really be doing if on a glp one?

Are you ready to transform the way you diagnose and treat complex chronic inflammatory illness? Because what if everything you've been taught to treat separately is actually deeply connected?

At the Lime Bite Symposium, we're bringing it all together. Join us November 13th and 14th at the Fort Lauderdale Pompano Beach Resort in Florida or attend virtually from anywhere for the premier functional medicine conference on complex chronic illness.

This year, we're diving deep into the interconnected drivers of chronic disease, including neuroinflammation, immune dysregulation, COVID spike protein related pathology, mold and mycotoxin illness, breast implant illness pans pandas, and of course, Lyme and other vector borne infections.

Because the reality is your patients don't have just one of these. They have several. And if you're not trained to recognize how these layers interact, you'll continue to miss the root cause.

If you are a patient still searching for answers, this is the information that your doctor may be missing. This is how we move from symptom management to true healing.

So join us in Pompano Beach or from anywhere in the world. Don't get left behind. Register now at limebites.com. That's L Y M E B Y T E S.com Yeah, I mean, 40% of the weight loss comes from muscle mass, so that's kind of an incongruent idea when you really think about it.

It's very concerning. You know, it's funny. I have my 7 a.m. Monday morning coffee with my guys, and they're all Ivy League-trained MDs, none of which use GLP-1 anesthesiologist, neurosurgeon, orthopedist.

And I thought I had them. Here comes the chiropractor out and boom, out comes Yes. And Yes has got Superman and Silverman and I'm ready. I was like, look what you guys are doing.

This and that and the other thing. They were like hold the horse, hold a chariot. The question is, do we see 400 pound patients? And, I am like no I really don't.

because they're involved in such deep medical care. So for that patient, I get it. But for somebody who has a foreseeable future of a normal body composition, clearly lifestyle is the best choice.

Not only is it a good choice, it's a great choice in conjunction if they were going to do a GLP-1. The numbers that they give are really not that strong.

When you talk about Ozempic, the average person in a study that was released by the company lost, I think it was 19 pounds and 2.5 inches in the year over their waste.

So I mean, I think you and I could do a little bit better than that, if you will. Absolutely. Well, the other thing that's interesting is like, you know, not just in the longevity space and talking about, one of the two predictors of longevity being your muscle mass.

But in addition to that I don't know about you treating complex chronic illness, but I get the question now all the time. hey, shouldn't I be microdosing a GLP-1 because it's good for inflammation and it helps to reboot the immune system?

Even though I no longer really specialize, there was a time when I was doing family medicine over a decade ago where I did a lot of functional medicine, like first-line therapy, with metagenics, doing lifestyle modification, and a lot of healthy weight loss.

I hated calling it weight-loss, sorry, I'm going off on a tangent, because it shouldn't be about weight lost, it should be fat loss, because it's about your body composition, not how much you weigh on a scale.

But, you know, going beyond that, it is like, look, these things are being touted for their ability to control inflammation and immune dysregulation, which our complex chronic illness patients should be paying attention to.

So what are your thoughts about GLP-1s in that arena? Well, eight out of 10 people in all their studies have dropped out, of usage of GLP-1. Seven out 10 are because of the gastrointestinal upset, and one out ten because they microdosed.

So the reality is, I always like to say that practice is reality. The reality that if eight of ten people walk out your office, not only you're not in business, you are not effective at helping the masses.

So I think that speaks volumes. I mean, I thing GLP-1 has its place for a small set of the population. And I have guys walking in here that are 50 years old.

They're put together pretty well. If they probably could stand to lose a little weight if they wanted to show their abs and they're taking TRT, they are taking in GLP-1 and going to the gym, but they're eating cheeseburgers.

Something's wrong with that picture. So anything that you look at, it's got to be the lifestyle change, lifestyle talking about exercise, stress reduction, supplements, a proper diet, whole foods, real foods.

I'll give you a couple of acronyms, and I hope I'm not going on a tangent. GPS, DNA, IRS, GPS. No ultra processed foods. 57% of the American calories come from ultra-processed foods, too much.

And don't add sugar to anything. If it comes with sugar, like in a fruit or banana, mazel tov. Right. DNA, no dairy. No nicotine, no artificial sweeteners.

IRS, inflammation reduction strategies. No processed seed oils. Yes, I know there's a famous Instagrammer and he says it's okay. Dude, it is processed.

That's why they put the word at the front. Anytime, anyplace, we can discuss it. Avoid food sensitivities because I believe that food sensitivity is one of the biggest reasons for chronic hidden inflammation.

And no deep fried foods. You do that, you have my $1,500 nutritional consult. And that's universal and fluid for many different patient populations adding lifestyle.

Get some exercise. I mean, I personally try and exercise every day. That doesn't mean I try to lift weights every. And you know what? Chill out. Tomorrow will come soon enough.

Don't have to worry about it right now. and that is from a type AAA New York City Jewish kid. So all my friends did hear me say that. The gauntlet down for all.

Muscle Mass, GLP-1s, and Lifestyle Priorities

Yeah. I agree with everything you said. The one little caveat that I would say, if you're using nicotine as nicotin therapy, I do feel like there can be absolutely a place for that if done right.

and in a patient that's been screened appropriately. I have actually seen a lot of positive outcomes from using it in the right way. Outstanding. So, yeah.

All right, I want to try to draw some connections with our listeners. We have the ultimate goal, immune resilience. I think that's what every person should be striving for, whether you are healthy or you're just looking to biohack, or if you living with complex chronic illness.

immune resilience ultimate goal. And to be able to achieve that, one of the things like you said that we have to deal with is inflammation, right? We can't have this chronic ongoing pro-inflammatory cytokine cascade going on in the body, which can be driven by a multitude of different things, including, like, you've said, food sensitivities, leaky gut, these stealth infections, poor nutrition, toxins, et cetera, But I think that a lot of people don't realize that the health of your microbiome, especially the gut microbiomes, is dictating a lots of this pro-inflammatory cytokine cascade, as well as immune dysregulation, toxicity, etc.

And I would bet that for the amount of people that do realize that, most of them don't realize how important the mouth, or as you called it, gum microbiome is, and how everything that is going on in your mouth but microbiomes is actually going down in seeding.

the gut microbiome. So I would love for you to elaborate on that and give us some tips and tricks on how to enhance or restore the gum microbiomes. I love it.

It's funny, I say that everybody should be having the Gut Conversation and kind of own it in functional medicine, functional nutrition, and functional health.

naturopaths, chiropractors, acupuncturists, medical doctors, and the like. But for me, the gut-gum brain axis gives us a prevention conversation, not just a treatment conversation.

So when you look at the gum microbiome, as I call it, 90% of people that have gingivitis have Alzheimer's. So interestingly enough, that's gingavitis creates a bacteria called gingivalis, which leads to a destructive enzyme called ginger pans, Which creates the Alzheimer.s So the gut gum, the got long brain axis, All is implicit in many neurodegenerative diseases.

So, as I said before, 27 years ago I graduated chiropractic school. I would have never thought, I wouldn't have ever dreamed that to treat the conditions that I treat now, graduating chiopratic school I went to chiorprastic school because I wanted to tree people with congenital tardicollis, which is what I have.

There's only one problem. There ain't too many. The only that I see happen every day is me. I didn't have too much patience. Then it was sports and it's great.

You know, I played college athletics or at least I tried. And I treated sports and it was it, was fulfilling, but there wasn't the deep intrinsic value.

And then the concept of functional medicine, looking at not just symptoms, getting the systems and getting to root cause resolution. Well, one caveat, it's not root caused now, we know, because we said gut, gut brain, its root causes resolution because the environment has become such a player.

So I know you're bursting at the seams when I say environment again, You're not just the line queen, you're talking about chronic complex patients. So am I, but I'm talking from a neurodegenerative disease condition.

Let's look at some of the numbers. Alzheimer's is the sixth leading cause of death in America. Parkinson's, it's 14th

and the fastest growing neurological disease.

Nobody should die from any one of those two conditions. Nobody should die. And when you look at Alzheimer's, it's number one leading cause of death for us in Australia.

Number one, leading causes of deaths in women in the UK. Again, nobody should died from these conditions. It's a compromise in gut-gum-brain axis. It begs the question, what do we do?

And the questions then becomes, how do do it and what kind of tests should we take and who do go to? So now it's a forum that you and I need to chat about.

Where do you think somebody should go look for or precursor if you're going to get a neurodegenerative disease? You love how I incorporate you? I love this conversation.

Yeah, my wife said if I talk to somebody and I don't ask them a question, I won't let them talk. It's not a conversation, it's a monologue. That is true, but you are the guest expert.

So I want to hear what you have to think. I know what I think all day long. Everybody wants to know. I like that. Yeah. So let's talk about the biomarkers that you look at.

Let's talked about any other testing that may do. And then I'm serious. I want to know if you have any clinical pearls on how to increase the health of the gum microbiome specifically.

Are you suffering from Lyme disease or another complex chronic illness and aren't sure who to trust when it comes to herbal supplements? Hi, I'm Dr. Mariah Hinchey, founder of LyMe Core Botanicals.

As a naturopathic physician specializing in complex, chronic, infection-driven illnesses like LyME disease, i needed herbal medicine I could truly trust.

That's why I formulated LyMe Core botanicles. where our herbal tinctures are handcrafted in small batches right here in Connecticut. We use the whole herb, never isolates, to preserve the full spectrum of medicinal compounds.

Every single step from sourcing to extraction is done with precision to ensure maximum purity, potency, and consistency. These are the same herbal formulas I used to heal myself and have used for years to help my patients and family members heal too.

And now I'm making them available to practitioners and patients everywhere. Lymecore Botanicals, herbal medicine you can trust from a doctor who lives this work.

Learn more at LymencoreBotanicles.com Yeah. Let's do the gum microbiome and then let's go to some of the tests. I'll go backwards. The gum, microbiomes without question.

Sounds crazy, but get a functionally oriented dentist. You know, I don't know if they use that term now, Good gum health really starts with flossing your teeth, brushing your tooth.

Gut Health, Food Sensitivities, and Leaky Gut Testing

I scrape my tongue, I've got the scraper, it's the most disgusting, ugly thing that I ever started to do and I did that. An appropriate mouthwash and without question, do that after every meal.

It's a bit of an inconvenience, but I would clearly, definitely do it. Some of the other things I do, believe it or not, is I use a non-thermal low-level laser, specific wavelengths that are known to attenuate to ameliorate bacteria, viruses, and pathogens.

And I found that also to be very effective. Getting back to the tests that I take, there is a plethora of tests in

functional medicine that we can all order without question.

If we took our checklist out, we could click a lot of boxes. In those boxes, it would be a pretty high price for the patient. So for me, the basic things I do is I'm a serum-oriented guy, and I think you are as well.

For me the first thing I'd do, is a do a comprehensive blood test with a food sensitivity test and a leaky gut panel. Those are baseline. Anybody who comes in, whether it's chiropractic, functional medicine, whatever you want to call it, Those are my baseline tests.

So I'm testing for food sensitivity, and food sensitivities are based on an IgG production, an Igg antibody production. That Igg also produces something called inflammation, the complement cascade, which is an innate immune system.

Guys, did you know that when you produce antibodies, it's not always that good? We have this conversation. I'm not going to go in the rabbit hole. I am going just look at it and say, IGGs are fine, but when you produce a lot of IGGS, it may not be that healthy for you because of production of inflammation.

Also, you store IGG's in your fat cells, which make your cells inflammatory and fibrous. You know, I just mentioned the idea of the IgG being stored in the fat cell.

I'm a big believer in testing everybody for food sensitivities because good food is a potentiator for good health information. Bad food as a potential for inflammation, so choose wisely.

You know, I asked Jeff Blantz something once. Just couldn't figure it out. And I said to him, Jeff, the father of functional medicine, why is up to 80% of your immune cells in your gut?

He goes, Robert, where's the biggest carnage coming from? what you put in your mouth. And of course, now we know that, you know, the respiratory system, that digestive tract is part of the outside world.

So now, I mean, what a visionary, we're talking about the environment. That is why that our gut has 80% of our immune cells. It is the conversation between the proverbial outside-world and the inside- world, and it's something that we can control is of foods that choose to eat.

Hint, hint, hit. So that's one of the bigger reasons and bigger things that I test for food sensitivities. I tests for the gut because, tell me what you think of this.

We always talk about, you know, what's going on in the intestinal middle of you. So we want to make an anti-inflammatory intestino in virates. They also want a heal and seal the got lining.

But how many practitioners, and I've done this, have forgotten about when something goes through the gut, what happens in the bloodstream. It's called the circulatory system.

So really all protocols, all lifestyle changes should be for really to prevent what goes in, the mouth and in your nose. Fix what's going on in a gut and fix what going in on your blood stream.

When you do that, there's a lot there, you'll have a good day. And like you said, you know, we have foods that categorically we can say are pro-inflammatory and are anti- inflammatory.

But to your point, if you are making high level IgG antibodies or IgA antibodies for that matter, or I guess IgE to be complete, You know you're going to driving systemic inflammation and You know what I say to my patients are like look like there's only so many things like we can't live in a bubble right so like were going to be exposed to some toxins were.

Going to the exposed you know just some organisms and things that we might not be able to. to control, but you 100% can control what you're putting in your mouth and, you know, I could tell you to eat the perfect diet of healthy

foods and you could be eating that, But if you are making antibodies against those healthy food and that is driving gut inflammation, and immune distraction or hyper activation can even be driving certain autoimmune processes in the body.

Now, that healthy food is a poison to you. And the reason why I want to make sure we talk about this is, I'm sure you've heard this, right? Like, oh, doing a food sensitivity test is just an expensive diet diary.

It's a waste of time. First of all, it's like, you know, Do you eat chicken? Because most people do, right? And they're like, yeah, like five, six, seven times a week.

And I'm like why aren't you making IGGs to chicken then if this is an expensive diet diary, or if it's like oh, this just showing all of the foods that I react to.

It's, well, because look at your zonulin. look at your anti-zonulin antibodies. Look at the level of leaky gut that you have. Like, yes, your body is allowing these foods to come in in their polypeptide form, and your immune system doesn't know what that is, right?

And so it's such a bigger conversation. And I've had so many doctors, even in the functional medicine space, surprisingly, poo-poo doing these food sensitivity tests and saying they're a waste of time and money.

I hear you, I lecture on the topic, so everything you said was mollifulous to me without question. And I don't know why people don t use this as a baseline test.

You made a really good point, and I want to make sure that people hear it again. It's fluid during the day. It elevates. So you really don't want to test for zonulin.

You want a test with zionulin antibodies because if you're producing a zomulin antibody, you had a problem with Zonuline and then you may also have a compromise or a rise in occluded.

So the best way to describe, at least what I do, is everybody take a look at me. I know not every podcast has a visual. Essentially, I'm taking one hand and another hand, and putting them together, making a tight handshake.

That's your tight junctions in your gut. Xonulin pulls the fingers apart, but they're still in contact. My tight junction went to a looser junction. Now, my fingers are occluding.

When I break apart my handshake, your tight junction is now a loose junction. All heck is breaking loose and things are passing that shouldn't, like large, undigestible food particles, bacteria, viruses, protozoa, the whole bit, and you've got what we call leaky gut or increased intestinal permeability.

Your first step towards like things Utah just talked about autoimmunity. For me, a big first that towards neurodegenerative disease possibilities. So why wouldn't you want to know about the integrity of your gut.

And why would you want to know if you have something that's leading to a compromise in integrity in the gut? Because the real question is, is it the chicken or the egg?

Is it that the food sensitivities before the leaky gut, or did the leaking gut cause the foods sensitivites? Well, that it's really emblematic of the need for testing and not guessing.

And that why I order tests like you do. You don't order a test just for the eff of it, you order test as a baseline diagnosis. Right. And what I will say is that if you have food sensitivities and you do not deal with them and heal your gut, they will become more severe and will have more and more foods that you are reacting to as time goes on because it doesn't get better without the proper intervention.

And so in my population where I have these, you know, these chronic infection-driven illnesses, it's the inflammation from the infection causing issues with the tight junctions now allowing undigested food particles,

toxins, other organisms, et cetera, into systemic circulation, causing more inflammation, immune dysregulation, et cetera.

But to be able to address that and heal the gut, what's the first R? We have to remove the things that are driving the breakdown of the gut and whether the foods came first or not, they're now one of first Rs.

And if we don't remove those foods that're driving this phenomenon, then we're never going to be able to heal the tight junctions. So for me, that's why I'm so passionate about testing for these food sensitivities, because we can't heal gut without identifying what they are and pulling them out of diet.

How do you know who's the bad guy? You know, it's interesting, we talked about zonulin and we talk about the zodiac antibodies, and I think a cellular point would be, yes, an excessive increase in zionulin isn't good because it leads to gut permeability, which can lead to an endotoxin exposure, LPS, which can lead to neuroinflammation, which in Parkinson's disease leads to an acceleration of the protein that uncouples the mitochondria in a brain coming from the gut to the brain via the vagus nerve called alpha synuclein.

Kind of same thing occurs in the idea of Alzheimer's, except it kind of passes the blood-brain barrier, the same pathway, not the Same protein and the microglial are activated.

They're going from a phenotype of M2 to M1, leading to acceleration of amyloid and tau pathology. So really, to emphasize, food sensitivities can lead to a compromise in intestinal permeability and can cascade all the way to the brain, leaving to neurodegenerative disease.

It doesn't have to, but part of the growth is definitely coming from the compromise at the gut level.

LPS, Herx Reactions, and Neuroinflammation

Absolutely. And if you have a compromised gut barrier, you're most likely going to have a compromised blood-brain barrier. The next frontier in neurodegenerative disease may not begin in the brain, it actually may begin the gut.

Right. It's fascinating. I know you graduated a couple of years because you are considerably younger than me. Did you ever think you'd be doing this? No, honestly.

I mean, you know, it's funny because we always had like this sort of slogan at my school. It was like, when in doubt, treat the gut, right? Everything comes from the guts.

So, I was lucky enough, there's a couple things that came out of my naturopathic college having ingrained into me. Number one is that Lyme and other vector-borne diseases are not what they teach you in any school, including mine.

I was lucky enough to have a patient with chronic babesia and Lyme that taught me that while I still was a student. And then the second being like, yeah, everything pretty much does stem from the gut, right?

Because we think of the got is just digest and absorb. but we forget that it's kind of like this two-way street. It's selectively absorptive, right? It is actually the sewer system out of the body as well.

So important, but still, no. I never really thought that we would be looking at neuropsychiatric conditions or degenerative diseases of brain. in relation to something that has gone awry with the gut and the microbiome.

But I wholeheartedly believe that that is the epicenter. That's where it starts. Who would have thought that when we're looking at what's going on up here, we have to look a little lower and look at the gut.

It's the bullseye. it's crazy and everybody's forgotten about something that's bi-directional with the got, which is the liver. Yeah. So, when I first ventured into functional medicine, the idea was, do you liver detox first or do the gut first?

Well, their symptomology will lead you. Well that was wrong. You should do them both together because whatever you do to your gut, you're doing your liver.

Whatever you are doing to liver, doing it to gut. By the way, as a chiropractor, I'm going to share something with some people. There's a gut to joint axis.

There's a gut to disc axis. Fifty-two percent of surgically removed discs had a bacteria translocation. Where do you think the bacteria came from? You don't have to look too far.

Look at a very close space called your gut. Gut to disk, gut joint, and gut brain. I'll give you another factoid. Six out of ten people that have a concussion.

have a gut issue, whether it be leaky gut or something that, oh boy, I'm going to bomb it. Small intestinal bacteria overgrow SIBO. Remember everybody, if you get SIBo, you can get leky gut.

If you got lekey gut, then you don't necessarily have SIbo. So I hope I didn't unwind you too much and spin you like a top. No, love it, it's great. I think it is also relative to the complex chronic illness talk, but especially like infection driven.

And I want to step back for a second for something that you said for our listeners that don't know what LPS is. Explain that, talk about that a little bit.

Then what I wanted to remind the listeners of is that Lps or lipopolysaccharide is actually the protein, the fragment at least involved in herxing, from that outer cell membrane from the dying bacteria that increases inflammation and causes that dreaded hercs.

It's really, really hard to control a herc or prevent a if you have severe intestinal permeability issues, because you're just going to be reabsorbing all of that LPS.

So I want to point out, Lps causes HERX. Leaky gut makes HERCs almost to the point that it makes treatment unbearable for patients. But Dr. Rob, I wanted you to talk more about LPs from a non-vector-borne disease standpoint.

LPS, lipopolysaccharide, as you said, or as I like to refer to it, little pieces of stuff. Or in Spanish, we call it El Diablo, the devil. So it's a endotoxin.

It holds gram-negative bacteria on the inside of the intestinal wall. As you've said leaky gut, Lps goes through. Its a direct binder. And I think essentially what you're saying is it is part of biofilm and the bacteria.

And that biofilm is fascinating in that it's kind of like that gooey substance in your mouth. Remember all that stuff that they always want to remove?

80% of bacterial infections, and again, I don't want wind you like a top, come from or have a biofilm. But LPS basically is a signaler of inflammation.

It attaches to something in the gut called toll-like receptor 4. Toll-like receptor 4 then stimulates an inflammatory pathway which calls NF-kappa-B, which stimulades NLRP3, the release of interleukins and cytokines, and all these inflammatory things.

It also damages the mitochondria. LPS, that gut, damages mitochondrion. No surprise because mitochondrial origins are in bacteria. and there's a direct gut to mitochondrial conversation.

Did you know the release of LPS increases the incidence of cardiovascular disease by three times? LPS also stimulates tolaic receptor too. And now we're really nerding out, which is the placking receptor.

So you got inflammation and plucking, no surprise. Guys, if you have low testosterone, check to see if we've got an LPs compromise, because if do, it attaches to testes, attaches overies.

as a chiropractor attaches to muscles and causes muscle injuries. It is probably the most egregious thing that you could have for inflammation in reference to neurodegenerative diseases coming from your gut, especially when you're talking about Parkinson's disease and damaging the dopogenic receptors and Alzheimer's diseases really causing the plaquing of the tau and the amyloid.

So for me, LPS is a without question baseline. And I'll say it, it pisses me the bleep off that standard medicals do not incorporate the testing of LPs and it should be a standard on any blood test.

Healing the Gut with the 7R Protocol

It shouldn't have to be specialty functional medicine test So for our listeners that now want to know how do they get their LPS levels tested. Well, the test, I guess I can give the tests in the…

Yeah, absolutely. Sure. So, full disclosure, i do work for KBMO Diagnostics. That's one of the reasons that I know the testing relatively well. They have a leaky gut panel.

You can do a great job. you'll get candida, yeast, you get zonulin, zionulin antibodies, and you will get occluded. And you also get LPS. If you have an elevation and release of candidates, it's like a plus one on an inflammation scale.

The higher the number the worse. A zonulin would be plus two, meclutin plus three. LPS probably like a plus 10 and maybe an exponential, if you look at it.

So I mean, to be forthright, I had a release of LPs. I've never had to compromise in my gut. Had some gum work. had have a tooth removed. They gave me an antibiotic and Rob the genius said, no problem.

No problem I'll just take a couple of antibiotics, probiotics. Well, guess what? Obviously, that's not the answer. I learned the hard way and I got cervical dystonia from it.

So, my congenital torticollis went to spastic torticalis and they lost some balance and stuff like that. Bottom line is everybody should test and not guess because Parkinson's and Alzheimer's have forced us to ask a bigger question.

What's happening in the body before the brain shows any symptoms? It's too late everybody. So walk us through before we wrap up. Walk us though, okay, let's say that we know that there's elevated levels of LPS.

We know there is leaky gut going on. And I know you do personalized medicine. But just generally speaking, what steps do you take to help that person to heal?

And what are your favorite nutraceuticals or supplements to use along the way? Great question. You spoke about the R program. I have my own personal Dr.

Rob's 7R action plan. Number one, like we said, we want to reset, reset what? Reset our mindset. Make patients understand that health is wealth. If the patient isn't buying in and not going to be compliant, Nobody's going to be an efficient doctor.

Nobody is going get the clinical outcome. Then you want to remove. Remove what? Well, you wanna remove food sensitivities. You want remove toxins. I mean, want the liver to bifunctionally modulated.

So you would do the detox with the gut protocol in this particular step. We would want a remove dysbiosis. You would want to use berberine for your train wreck patient, your bowel-oriented patient.

You'd want use oregano, oregan oils for upper respiratory issues. What I call the anti, well, garlic is antibacterial, antiviral, anti-fungal. Then you want the dynamic duo, biofilm buster.

with something that I like to refer to as SBI, serum bovine immunoglobin. So you want to open the biofilm and you don't want that bacteria to die because as Dr.

Hinchy said, that Herck's reaction, That sucks. You have that combination, you open up the acorn, the biofilm, and you take the nut right out, outstanding.

Then you would want to move to the regenerate phase. Actually, I would rather do the replace phase, replace with digestive enzymes, stomach acids, pancreatic enzymes.

And the secret sauce to that would be bile. Bile decreases the incidence of leaky gut, decreases incidence small intestinal bacterial overgrowth, increases cholesterol absorption through the gut.

Most practitioners, unfortunately, still haven't adapted bile as a major protocol. The fourth one would be to regenerate. Regenerate, you want to heal and seal the gut lining and create an anti-inflammatory intestinal milieu.

So we'd use pleiotrophic nutrients that both create anti-inflammation, heal and seal the gut lining. You're going to use a cornucopia of different nutrients for that.

Of course, glutamine. But remember, if you use glutamene, you've got to used taurine with glutamin. Use omega-3 fatty acids. If you're gonna use omega 3 fatty acid, then you can use specialized pro-resolving mediators and a litany of other things in there.

Then you would use what I like to reject called the replace. You're going to replace with what? You know, replace it with pre and probiotics. For me, I virtually never use a probiotic without a prebiotic.

I can make a very strong case that a prediotic may be more important than a probiotics. And then the sixth thing you would do is reintroduce your food sensitivities, one food every three days, see about symptomology.

If not, you could just retest. And lastly, he would want to retain. I mean, when you go through this whole thing, each step is a month at a time. You're now at the end of six months and you say, well, now what?

Well, how do you retain? The good qualified diet, Omega-3 fatty acids, vitamin D3 with K2, a pre and probiotic, amethylated multivitamin, and probably a combination drink of collagen and creatine, which we didn't even really discuss.

But creatinine is without question a huge nutrient. When I graduated Cairo School, my thesis was on creatines.

Creatine, Supplement Strategy, and Closing Thoughts

Yeah, believe it or not, creatined for muscle hypertrophy and recovery. Look where it's gone. Yeah, it's gone to brain health for sure. Yeah. So I think the big creatine question, we'll answer that before we close, is how much creatinine?

Well, five grams is great for muscle recovery. 10 grams great is for the brain because the first five gram go to the muscle. The next five go the the brains because muscle is real greedy.

You got to make sure you feed the muscles first. If you have a neurodegenerative disease, maybe 10 to 20 grams. Do not, do not take creatine with caffeine or hot egg with solution.

It breaks up the molecules. If you're a female, make sure you are on the upper levels of taking creatinine supplementation as compared to males because you don't have as much muscle mass, so you do have much creatines storage space.

Thank you for that. So important. I feel like we went a little sideways. We didn't necessarily get to talk specifically about the longevity herbs and nutrients and things like that, but I feel like what we talked about was actually so much more important because really, you don't have a shot at quality longevity if you do not have healthy functioning gut microbiome and immune system.

So really focusing on that immune resilience. And you and I could go on and talk all day about this. Like you could literally put on a full on seminar about longevity medicine from the way that you look at it.

Love to, love to. Just remember Jim Rome once said, take care of your body. It's the only place you have to live. True, so true. And on that, thank you so much for joining us.

It's always a pleasure to talk to you, and I'm sure that our listeners learned so, much. If this was helpful to you, please share it with others so that they can find us and get the help that we need to recover from their complex chronic illness.

So until next time, remember, together we all heal stronger. We'll see you next. If this episode gave you an answer, brought you new insight, or made you think differently, subscribe to the Lime Bytes podcast and share with someone who's ready to take control of their healing journey.

And if you can, please leave a review. It helps others to find the show. Thanks for listening and we'll see you next time.