Longevity vs. Biohacking

Hey everybody, Dr. Rob Silverman here, Proven Health Alternatives. I have my good friend Dr Lauren Marks here. And he's here to share some insights. It's very rare that he does any podcast, so I'm very happy that's he is joining us today.

He's going to talk about longevity and biohacking, its physiology. As we know, longevity is the insightful conversation of 2026. And we're going get some interesting looks how longevity differs from bio-hackin.

Longevity is more of a science orientation. Lauren, how are you today? I am great, Rob. Thank you so much for having me. I've been looking forward to spending time with you and sharing some comments with our guests.

Outstanding. They're really going to be taking notes. You're going give them a lot to share. What's most interesting is that we talk about longevity, and longevity in some ways is really not like the new thing.

We've had our anti-aging bulge. Now they call it longevity. But when you think about where you started 40 years ago, did you ever really think you'd be treating longevity?

Not at all, you know, going to chiropractic school in the middle 80s and, we're taught a musculoskeletal model of care and the effects of the nervous system there off, but none of this existed at.

And so it's been an evolution, and I thoroughly embrace it and enjoy it. After all these years in practice, It's really wonderful to continue to expand my own horizons and ultimately help patients because that's what you're supposed to be doing if you are a doctor.

You're here. If you can't help them find somebody who can, that's why I rely on you and those 11 a 30 calls and P those are PM calls, folks. Those are not AM calls.

It was a PM call. Exactly. So, you know, we were talking and, You know we're talking about this longevity thing and you made a comment to me that don't confuse longevity with biohacking.

Why don' you take the mantle and run with that? Well, that's true. Everything today is, how can I hack it? And you can't. In plain and succinct, you really can hack your physiology.

What you need to do is embrace some of those things. It's not like these things don't have value, like cold plunges and red light therapy and peptide stacks and wearables and so forth.

it is essential that we maintain our focus on fundamentals. And what that means is looking at things that have always been important, but having the depth of understanding that's associated with them.

When I was teaching for many years, I always taught my doctors, don't bypass fundamentals, right? OK, so in other words, it's you You see this nutrition, you see, this formulary, they're sick.

People are not healthy, and they are looking for answers to their problems. But it behooves the physician or the treating healthcare provider to maintain a grounded footing on fundamentals.

And those are, looking at real physiology. We'll dig into that a little bit, but those of the things that you have to get down first. Then once you've got those established and you implementation strategies for addressing dysfunctions in the metabolic system, then you can move on and do ancillary things like that.

That's great. I love the idea of physiology, not necessarily just a belief system. And you and I both do some cold

plunges. We do sauna. we know that it works.

There is some science behind it, but it's more of a biohacking idea. I happen to love the peptide stacks, they use a lot of oral. Wearables are great because you know test and not guess.

We've talked about that many times. I believe longevity is no longer a distant aspiration. It is for us the chiropractic frontier of the future. Or we like to say it is the integrative doctor who is going to be the longevity leader.

That said, you want to get into some physiology. For me, I believe that we would like to discuss the idea of metabolic control first.

Metabolic Markers and Insulin Control

So we don't really have a longevity problem. What we have is a metabolic and an inflammatory problem disease doesn't begin at diagnosis. It begins like 15 to 20 years earlier.

And most people miss it because their labs are seemingly normal. But what is normal? You know, when you, it's, long been, held as an understanding in functional medicine versus conventional medicine that using reference ranges on a laboratory are important, but some of the ranges are so wide that the If we use those and we stand on those as solid ground, we lose the nuance of what's really happening metabolically or it doesn't really matter what that is.

And so over time, with better science and better understanding, We understand that narrowing those ranges into more optimal formats is what changes lives and changes the trajectory of metabolic health.

So little spoiler alert. So you're trying to say that the ranges that are on a typical blood lab are not necessarily functional, they're more disease states versus optimal state.

And if we want longevity, we wanna lead to optimal stage. Absolutely. That is correct. If that's the case, give us some examples, you know, like fasting A1C or hemoglobin A 1C, fasting glucose.

Why don't you detail that? Sure. So hemaglobin is a marker of blood sugar over approximately a three-month time frame. And it's a critical marker and it should be employed in every physical.

Let's start there. Now, the way medicine has framed it, that you need to be below 5.7% in order to not be in a pre-diabetic or moving towards a diabetic state.

And it's not like that's wrong, but it is really important to nuance the fact that, let me clarify the that if I told a patient, that you're 5.6 instead of 5,7. Just from a mathematical perspective, it doesn't seem like there's much of a difference with one-tenth of the point.

But because it's a percentage, the difference between every tenth of point that your moving up or down is a statistical significant change in the average blood sugar.

And blood sugars, as we know, is critical part of metabolic health. So if I were to say to you, I have a 50 year old patient and they want a good longevity score number on the Hebrew Goban A1C, what would that number be?

That number would be 5.5 or less. Now, I had a few patients that come in at 4.8 to 5. They weren't patients of mine, they're just on a very, very low carb diet, which we should really talk about at some point.

What's your feeling on that? I've seen many functional medicine reference ranges by different clinicians or groups who have said, hey, the closer you can get it to 4, 8, 4 or 9, like the longer you're going to live.

It's very, very difficult in today's world to attain that level unless you are eating a diet that's more similar to a ketogenic diet. It is very difficulty because the amount of carbohydrates that we eat is going to raise blood sugar on

average, and it's going push those numbers up.

But be that, albeit that. I think that it's reasonable in order to be between 5 and 5.5 because compliance is equally important. If you try to create an artificial number to tie people's diet and lifestyle where it becomes so restrictive, then they fail to follow the program.

Compliance is key, as we both know. We've talked about that a myriad of times. Right. So with the metabolic markers, give me your three most important longevity metabolic marker.

By far, and the one that tops the list is going to be insulin. Second is gonna be looking at cardiovascular health and looking at lipid markers and then within that there really are three that are essential to cover which we certainly can discuss which would be ApoB.

It's also going to be HSCRP which is your inflammatory marker and it's going HSCRP and LP little a. So why don't you delineate each one of them? Cause I concur with you wholeheartedly on that.

In cardiovascular assessment, in a standard medical practice, you're going to get a basic lipid panel. That's going be LDL HDL triglycerides and a ratio.

And then and a total cholesterol. And if that number is above the standardization that has been created in medicine, that is all that they're looking at.

But ApoB is what is called a composite marker. Not only is it a component, but it's a composites of all the atherogenic particles that we now know that damage the endothelial lining of the blood vessels.

So as a matter of fact, ApoB is so important now as is a critical marker that there was in 2025, there a systematic randomized review of almost 600,000 patients.

And they found that the outcome assessment of knowing ApoB trumped LDL by far. That's how important it is. So if your physician is not running those markers associated with their basic lipid panel, they're kind of behind the times.

I concur. You're much nicer guy than I am, because I say if they don't take it, maybe the patient consider firing them. But you're nicer than me, you know, reserved.

I mean, I agree. That's a big miss. It's A big mess. All right. OK. So HSCRP is another one. Patients bring their blood chemistries to us all the time.

And we look at them, and I'm looking at all of the basics. Well, where's the inflammation mark? So that's another one that is critical to look at. So this is a marker of cardiovascular inflammation.

How important is cardiovascular information that irrespective of the level of either LDL, total cholesterol, and the other particles, what they found was that inflammation is the trigger that ignites the whole process.

As a matter of fact, Even patients that have normal lipid levels and have high HSCRP or have equal cardiovascular risk. So it's nothing to look away from.

Major point there. It's Nothing to Look Away From. Great takeaway. No, no, it is essential. And yes, HS CRP can be influenced by inflammation outside of the cardiovascular system.

But the basic tenant is always our reference range has always been one to three. Now you really want your HSCRP to be below 1.0. You really that. If you want to talk about longevity, you have to get inflammation as low as you possibly can.

Inflammation is the devil. It's associated with every disease. But if we're going to stick with the cardiovascular conversation, we have understand that that inflammation, if it's high, is what takes those plaques that are the

plaque burden that is sitting inside of your blood vessel lining, that's what lifts it off.

That's where it creates the dislodging. that what creates strokes and the heart attacks. So again, just on that conversation alone, look at the relationship of how important inflammation is to a cardiovascular disease risk assessment.

How come every physician does not routinely run that? So would it be fair to say, well, I'm going to slip with that. You said that because I've already thrown them under the bus once.

I don't want to throw them on the other bus anymore. Fair to save that without inflammation, we don' have to worry about our cholesterol markers for longevity as much.

That is correct. So APOL-B is kind of a composite, as you said, of all the bad atherogenic markers, LDL, VLDL. And I know you want to talk about Lp little a.

Without question, you mix an APol-b with a high HSCRP C-reactive protein, You got a problem. Now, most people, and please detail this for me, HS CRP versus CRp, People confuse the two.

Yes. That's a very good point. So, HSCRP means high-sensitivity CRP. CRRP is C-reactive protein that's not high sensitive. It's nuanced, but a really important one.

CRP is an inflammation marker as well, and it has less sensitivity. If you really want to look at inflammation that's more systemic, then you look at CRP, and if you want to look a cardiovascular inflammation, it's HSCRP.

I think that is fair to say, although it can be nuanced. And LP little a? Oh, no. LP Little a is the elephant in the room. For ever in a day, in medicine, we've known about Lp little a, which happens to be a subtype of LDL.

It's actually an LDM molecule with a little tail on it. Right. And yet it's profound. So one in five people carry this genetic risk. Somewhere between 70 and 90 percent of people that have it are it is exclusively Due to genetics and because it's that it it due to that process It's something you were born with meaning you want one of your parents or both of Your parents had this genetic fault or carium and you got it now I have it so i'm very well aware of it and But what does it translate to and what it translates to is increased risk?

So it takes your metabolic panel of looking at your cholesterol and all its subtractions, and now it puts a very serious flamethrower underneath it.

Cardiovascular Risk: ApoB, hsCRP, and Lp(a)

So not knowing it is like putting blinders on. Everybody should have it performed minimally. At least once to know if you're a carrier. There's debate about that if you continuously run it, like year after year, because you want to know where those numbers are.

They are not suggesting that at this point. The number will change if do it because in my executive physicals, it's included. So I've looked at the serial levels of it over time with patients, and what I've noticed is that that number does move around.

Now, there are no drugs associated with it, but they're under they're being studied right now. There's a drug called Pella-Carson and one other pharmaceutical company is making it.

They have figured out what the pathway is that is causing the Lp little a and in pharmacology they look for these biochemical pathways and then they try to alter its expression through science.

So They have figured it out at this point, and that's a really good thing I'm going to say. It's in phase two clinical trials right now. You said LP little a numbers move around.

I found them to move round also, which is perplexing because when you said they move, around they don't just go up. They also come down. That's correct.

So could it be at some point, this is, you know, it's not hyperbole, but it is looking to the future, could be conceivable that maybe this isn't a genetic marker that they think because it goes up and down and maybe we'll be able to make an impact naturally?

No, I don't think so. I think that there are other variables. It is definitely a generic factor. What influences the genetics, that is to be understood.

But I did a review of the data on Lp little a, and I was curious to what type of numbers that a patient can have on their blood chemistry of an LP little A and does the level manifest in a way that is either more or less deleterious to the person.

So for instance, first thing I want you to, that our guests to know is that Lp little a, depending on the lab, can be measured two different ways. And so whether it's the unit of measure is like milligrams per deciliter, and I forgot the other one, I think it is micrograms and so forth, but we have to be able to that it orange is to orange and apple to apples.

Otherwise, we're going to have different numbers. That's first caveat. And then the second is, if we're going to use milligrams per deciliter, then, the reference range is that you are normal if it's less than 30. If your number is between 50 and 100, this is considered mild elevation or borderline.

if the number 100 to 150, it is consider high. And then if it's over 180, then that is considered very high risk. So in this case, knowing the number, and knowing if you have it is first.

Second is figure out which units of measure they're measuring it in because it different. The numbers I gave you are only four milligrams per deciliter.

And if its in that range, that matters because it is a much, as the numbers go up, there's a more potent atherogenic effect that occurs. And since right now there are no medications that are currently available, And any of the natural substances, by the way, we shouldn't throw that out, any natural of substances they can make a dent, but the dent is not statistically significant enough to say that I pulled risk out.

So like for women, estrogen can lower it. for both sexes, niacin has been the only thing that has ever shown to actually lower the Lp little a, but at the same time after a lot of review, the problem with that is that it doesn't change the trajectory of the disease.

So it's a very weird thing, that you can actually take an agent that lowers the the value, but doesn't change the clinical outcome. And that's a huge takeaway.

I mean, we look at these blood tests and patients come in all the time, as well, you know, because you have 40 years experience. They come and they say, here's my total cholesterol, Doctor doesn't like it.

Now you're talking about a genetic marker. And now you talk about A pole B. But now, you talking bout lowering a generic marker, which is conceivable, but yet not making a clinical statistical dent in the adverse outcomes that needs to resonate for everybody.

So everybody 1% to 2% of the population, to be fair, gets their LP little a tested. You test for it, I test it. And about 5%-6% percent of population tests for A pole B.

So this isn't just longevity. This is true healthcare. It's true integrative medicine to test these things. The diversity of markers needs to change. We can't just keep doing a CBC with a differential, a comprehensive metabolic panel, which is essential, should be done on every person, and a basic lipid panel.

Tap someone on the shoulder and say, okay, Rob, you're looking good. I'll see you next year. The problem with that is there are so many other markers or metrics that we should be looking at to ascertain your health and whether you are at risk.

Go back one step and say, what is the purpose of the physical? Is the fiscal purpose to only find the presence or absence of disease, or is there predictive biomarkers that learn from and then make, whether it's dietary, lifestyle, pharmaceutical, nutraceutical, the whole purpose should be we need to change and shift the focus to a broader-based assessment to help people have a healthier life.

Absolutely. So in the guise of longevity, now we're talking about longevity and lifespan, obviously, cardiovascular, metabolic health will increase lifespan.

It'll also increase health span, you'll be healthier, and will clearly give you vitality. The big conversation piece, the exciting conversation is muscle mass.

Gabriella Lyon, I say it all the time, she probably owes me a cup of coffee that I'm drinking right here. Muscle mass is the longevity organ. I believe it's the currency of longevity at step one.

Where does muscle, muscle mass fit in to metabolic and cardiovascular health? Muscles is everything. Musles is not cosmetic. It is for some people, but in reality, muscles is metabolic control.

muscle is glucose disposal. it is fall prevention. its survival. Take a look at the patients who are in the 70s, 80s and up in life. The ones that have preserved muscle mass are the ones who survive the longest.

Muscle will save your life! being aesthetic or being a very thin, frail person as you get older is one of the most dangerous things that you can have or be.

So, from a physical standpoint to a metabolic standpoint. When you have enough muscle mass, you have a repository for the glucose to go to. So, conversely, when you less muscle mass, you'll have less place for it to grow.

Now you eat a diet that's higher in carbohydrates, and especially if it's the poor quality, highly refined carbohydrates. You take them into your diet, your body breaks them down into glucose, the The insulin molecules go after it right away in order to carry them or ferry them into the cells for fuel.

They go to your brain for a fuel and then, but there's still more left over. So the body goes, okay, so let me store some in the liver for glycogen for later.

I'll do that for you first. And then What do you want me to do with the rest? Well, that's where the muscle comes in. So the muscles mass will hold on to that glucose for you if you have it.

The thinner you are with less muscle mass, no place for it to go. You start seeing elevations in the blood sugar. So it's a key metabolic constituent and it is essential for your life.

Muscle mass is a metabolic organ. I think we both discussed that in detail. What's most interesting about muscle mass, is when you get it to contract, you make something called myokines and all these health promoting cytokines, believe it or not, there are some that are there, come out and they promote health, interesting.

Falls, I got some numbers for you. In an average year, nearly 40% of people over 70 fall at least one time. And one out of five falls result in serious injury.

In the US, you ready for these numbers to piggyback on what you said? 36 million falls, 8 million injuries, 3 million emergency room visits, 1 million hospitalizations, over a half a million fractured hips.

Approximately 25% of those fractured hips will perish within a year and 50% percent of them will be unable to return to the prior level of function because of lack of balance and lack a muscle.

One of the things when I came in, because I've got some things going on with my neck, everybody knows that I have got torticollis and I got a little dystonia, was we worked on balance.

Muscle is number one, balance is two. So balance it's so important. It's an amazing statistic when you actually start to look at it. People over the age of 65, it is the number one cause of emergency room visits.

Muscle Mass and Fall Prevention

That was so astounding to me that it wasn't something like heart attacks. It was just unbelievable. And so the problem, of course, is as you get older and you have less muscle mass, you also have more bone density.

tend to have lower muscle mass than men, and they go through a hormonal shift in their life. They have less dense bones than man do. There are higher risk for fracture.

We're not talking about fracturing a wrist, we're talking fractured hip. And when you fracture a hip, that's a big deal. Most people see it as like, oh, well, with modern medicine today, you know, your fall down, break your hip They take you to the hospital, they fix you up, They put a rod in, put screws, a plate, whatever it is that's necessary, and eventually you'll heal, you get some rehab and you will be back to your normal you.

But the reality is, that when they studied this subject matter, what they found was 15 to 30% of people over 65 who fall and have a fracture will die within 12 months.

An astounding number. The second is if you can actually survive the process, you will never return to pre-fall function. Now, that's a significant decrease in the quality of life for people, and it decreases independence as you get older.

So it could be a very pivotal juncture in one's life. It's not just a broken bone. It's a big deal. It is a change in your life if you can survive it.

So, looking at falls, we then have to say, okay, so we see the statistic, how deleterious it is, and we know that muscle is needed. But what is it that we could really or should we be looking at prior to this happening to a person?

And the answer is not to wait until you're an older person to stop paying attention to your balance. Most people, if I asked you to stand up and stand and bring one leg up and Stand on one way.

Can you hold that for 10 seconds without wobbling all over the place or falling down? That's the first test that you can do for yourself. And if you're a little older and I would suggest that if You're going to do that test, you should do it next to the wall so that You can catch yourself, but everybody should be able to check that.

Number two is doing it with your eyes closed. Now, because I do balance therapy in my office, assessment and balance, what we found was that as soon as you take the eyes out of the equation, people go down so fast, it's not funny.

And then people say, well, hey, I don't walk around with my eyes close. Why is that important? Well, When you get up in the middle of the night and you have to go to the toilet and it's very poor or low level light, then your proprioceptive ability, all of your faculties that you use to maintain the normal upright posture and balance becomes diminished and people do fall in their homes.

It's not just outside. The takeaway is that we need to start to pay attention to balance a whole lot earlier in life, not once it manifests as part of the senile process of aging.

To backpack on what you said, a 2022 study, 12-year study of more than 1,700 older adults. They tested their ability to successfully balance on one foot with the eyes open.

strongly correlated with longevity. Now you took it to the next step. You said not only eyes open, you said eyes

closed, which leads me to. The intermission point where we're going to talk about rapid fire stuff, where are we going put you on the hot seat?

I know you'll be able to handle this. Let's do some rapid-fire questions. What's one myth in functional medicine, functional nutrition, You would love to debunk.

Well, I think we started off on the right foot with that, which is to say, look at fundamentals and stop going after every shiny spinning object. So I that's a tenet that we should start with.

I love it. The biggest misconceptions about chiropractic care in the modern integrative context. Chiropractics has been evolving since the late 1800s.

And there are some doctors out there who still practice in the same way that it was originally invented. And the fundamentals of chiropractic remain the the application of adding all of the scientific updates and integrating other aspects into neuromuscular skeletal care.

needs to be embraced, and I think it needs be embrace by all of us. One lab marker physicians ignore too much or too often? Insulin, number one. Is that insulin, or are you looking at HOMA-IR?

Well, I'm looking insulin. Okay, so you bring up a point. Homa- IR is the homeostatic mechanism of insulin resistance. It's an equation. And in order to do that equation, you have to have the fasting glucose and you to the have fasting insulin Now, that is what's called a predictive marker.

So, in order to know a Homer IR level and where you're at and why you would want this is because HomerIR gives you a true number as to what is your propensity for developing diabetes.

That number should be ultimately one or less. And no one has to go and do the whole mathematical equation. You can just go onto Google, or just put into your whatever, and just putting HOMA-IR.

And you'll get a Homa- IR calculator. The Homo-ir calculator popped up. As long as you have your fasting glucose and your fast insulin level, you put those two numbers in and you push enter, it will immediately tell you what that number is.

So they stratify it as if you're one, you are in the sweet spot, like you have no increased risk. But if your number is 1.9 or higher, then you will have a pre-diabetic risk, and if the number's 2.90 or high, your in trouble.

And I can't tell you how many patients I have high numbers in that category. This piggies back to on a standard physical, if you have a glucose level alone and you're using that to rely on whether somebody has a healthy or an unhealthy blood sugar metabolism, you are so missing the boat.

As a matter of fact, glucose and even hemoglobin A1C you can still miss the boat by not having insulin. The three are necessary. I call it the trifecta or the triad.

You have to have fasting glucose, you have hemoglobin A1C, and you must have the fasting insulin, if you do have those three markers you are unquestionably able to determine the role of your metabolic health in a large way that is being missed.

And it's easy, it is not expensive, and it should be employed by all physicians on every single physical. Most underrated intervention. Diet and lifestyle.

Very, very important. Used in integrative medicine, used in functional medicine. very, very underutilized in medicine. Where do you think the idea of functional medicine, which is root causes resolution, will look in the next 10 years?

Very bright, Very promising, because it's based on systems biology. It's Based on true physiology. And by not

treating downstream effects of diseases only, i.e.

you have a type of disease, so take this medicine or do this procedure. Going upstream, looking at the mechanisms that produce it, this is going to be the change that we need to see to make humans healthy again.

On a scale from one to ten, one being Ten being fabulous. I'm going to give you some supplements and some exercise and give me a ranking. NAD plus. Precurses.

Eight. Okay, I happen to love it because mitochondria are great for people that are suffering from Parkinson's disease. The precursors are critical. NR and NMN, you know, we could debate which one, but.

Right. Right. There was an interesting post that somebody had about NR being the hallmark, but again, that's out of the realm of conversation for them.

Right, right. Heptides. amino acid sequences that are replacing what the body already makes and there are regenerative capacities to these. I think it's a little young right now but you know everything starts out somewhere and gets implemented and over time you get enough body and data on how effective they are but they're very promising.

Collagen and plant-based protein sources. You want a number? Yeah, give me a 9.5 to be exact. I love it. Pre and probiotics. 9 point 5. Okay, so here's the question.

If somebody has leaky gut, are you happy giving them a pre and a probiotic? That's a yes or no question No, it's not enough information. And I'm not giving you contextually enough, because then I was going to ask you about something called small intestinal bacterial overgrowth, but I wasn't afraid I would open up the floodgates on that.

So since I prefaced it, let's talk about the gut. I believe that the got is the epicenter of your health. 80% of immune cells are in your gut, I believed with all the information, all of the published data, 1700 articles in PubMed, excuse me, thousand articles on PubMed.

It clearly can be called scientific edifice at this point. That said, where do you think the gut lies in your longevity scheme? As you so eloquently say, it's the epicenter of your health.

So many times it is not reviewed appropriately. Now, again, I compare and contrast often with what goes on in medicine, not to be negative or the point of our conversation is one in which we're trying to embrace a wider brushstroke against human health and disease.

It's so important to look at the gut health. And For a really long time, the only time that patients could connect the dots between assessing gastrointestinal health and their overall health was when they have gastric intestinal symptoms.

But as we have found out over the last 30 years plus, is that the microbiome, which is all of the organisms that live within our gut, are tantamount to how healthy that we are.

And there are tests that are out there now that can identify or elucidate what's going on with that.

Balance Training and Rapid-Fire Takeaways

Some of them are debatable, some of the are not. But, you know, I do a particular stool test where we look at to see if there's microbes overgrowing commensals, which are what many people call probiotics, but they're more than that.

They're normal inhabitants of the gut. And there is an unbelievable amount of influence that these organisms have to your health. They're not just this biomass of bacteria, virus, what have you, microbes that are just living there.

they are signaling molecules. There is no part of your body that does not become under the influence of microbes in one way or another. The key is to have a balance of them.

And as it is said, If 85% of your gut microbes are in the healthy zone and we only have 15% in fozone, then we are a state of balanced microbiological activity.

Once that number becomes skewed and to the degree that it becomes Skewed, Then we find that disorders and diseases become more manifest. So, look, If you go to a dermatologist, for instance, and you have an inflammatory condition on your skin 95% of the time, you're going to be, once they do a diagnosis, they're gonna use topicals, and once in a while they'll do some oral medications for them.

But not looking at the gut microbiome and its role in this axis of gut to the skin, of which we could go into the guts of skin to gut, to brain, the heart.

There is no organ system as I said that is not influenced by what's going on in the gut. The gut-to-everywhere axis is really what we need to start calling it for sure.

So you were talking about that 85%. So if it's under 85% the good bacteria or commensal bacteria, if you want to call it that, you get dysbiosis. And dysbiosis is a slippery slope leading to detrimental effects, overgrowth in candida, possible expression of excessive zonulin, lipopolysaccharide, which is awful.

It's an endotoxin. But I think to really layer on what you talked about with the gut, what's most interesting about it is the bacteria is able to communicate with a nervous system.

And that nervous is an enteric nervous. Largest nervous in the body, in a gut. So Lauren, as a chiropractor, you know how many chriopractors I've said, if you're going to look at the spine and we are central nervous system experts, everything we did for the first 10 years of practice was central, nervous, system oriented.

Now with this information, understanding that the gut has the largest nervous and that enteric nervous. And the bacteria communicates with a nerve called the vagus nerve through something called a neuropod on the transverse colon.

communicates with the vagus nerve and then shoots up afferently between the gut to the brain, gut-to-brain axis, the superhighway to health. Whatever you do to your gut, you're doing to brain and your central nervous system, it really shows that the body's all interconnected and we just evolved chiropractic decades.

I'm feeling good right about now. That's beautiful, that's very eloquent, but it's also very true. And so this is what I mean in terms of embracing the greater base of knowledge to what we were originally trained at.

And I think that just like in any division of medicine, growth is necessary. As we learn more, we should implement more. And as we do that, I think that the outcomes will be better and better.

Without question. So that's why you read every day. That's what we try and see patients on a daily or certainly a several days a week basis because we take that clinical.

We like to implement it in what, we like, to refer to as Monday morning application to really have the true equation for patient optimization and success.

And that's why we like the concept of longevity so much because who doesn't want to live longer and who does want live healthier? So I've heard you say, I copied it for an article that I wrote.

I'm not looking to add years to your life. So metabolic health, muscle health. Um, gut health sleep stress. What do you. When we try to prioritize these topics.

You could easily call each one number one. And so let's just call them essential. If you can't sleep, you cant heal.

Period. End of the story. Now, of course, there is so many nuances to that statement, but there's a very unfortunate scenario and that scenario is too many people don't They either don't sleep enough because they feel like they have to do so much in a day and so many responsibilities and family and work and what have you and So that's But that s less of an issue to me than it is to those who can't Sleep And one of the things that I found in all my years of practice Was that even though there's a multitude of reasons for why people don t sleep if I had to put a tier of which came first, I would say that anxiety and stress is number one of what causes that in people.

Everybody jumps on, okay, you can't sleep, take melatonin. It's almost like it's a trigger. Right. But you have to understand that melotonin only helps you fall asleep if, in fact, You have a dysregulation within that system.

So if it is difficulty trying to stay asleep, It's not going to do anything for you. So you have to always find what is causing that in that person. And that takes a little bit of time and conversation, which physicians don't typically have a lot of to ask the right questions.

How are you going to get the answers? Good point and I think that's one of the bigger complaints nowadays is the patient does not feel that the practitioners, the diverse practitioners not any one particular brand of practitioner is not spending enough time and they're not trying to root cause and You know, I've had many people on and we've discussed, is our failing health just bad choices?

Is it bad policies? is the system broke? Are the patient populations a little lazy? And the consensus is it's all the above and, we just don't value health enough.

So we're very hopeful that longevity. will imbue people with enthusiasm to wanna take care of their health and really invest in the idea that health is wealth.

That said, what three things can people do now to make an impact on the longevity and their heath? Number one is gonna be build and protect your muscle at all cost.

Stop looking at weights as if they are something that's gonna hurt you and start embracing the concept that they're gonna help you. I've always looked at this The mentality and especially with women over men, which is if you tell a man to pick something up heavy they'll be like, okay, I'll try it even if I Not sure if i could do it if You tell, a woman to pickup especially and i'm not talking about a 20 30 year old right we're talking, about getting up an age and you say Pick that pick up that weight they said no i can't do that Why, and it's a, well that's 40 pounds Okay, so you have a five-year-old kid, he fell down.

What's the reflexive nature of that woman is going to go and pick that kid up? The average weight of a 5- year- old is 40 pounds. They pick up that kids up in two seconds.

So it's a mindset. I tell it to my wife related to her mom, who's in her latter 70s, and she says, no, she can't do that. I said, yes, you can do it. And you have to stratify it, too, the person's capacity, but You can do it.

And conversely, listen, just because a man could embrace it doesn't mean they will embrace or they do. How many patients will come into our office who are in their seventh decade of life and say, do you exercise?

Yeah, I walk. I said, well, that's good. But do you lift weights? No, I don't. OK. Well, you need to start. And then we get into this whole conversation of A, we have to be able to eat enough protein in order to feed your muscles.

So that is called muscle protein synthesis, number one. Two is you have squeeze those muscles and put a demand upon them in to allow them to hypertrophy, which means to grow.

If you don t do that, then you are going to lose it. So, there's various statistical analysis of how much we lose, but once we get up there in age, we are losing, you know, between one and three percent of muscle mass per year, depending on how sedentary or how active your lifestyle is.

So I kind of like to frame it for people by saying, You know you were a 175-pound man 20 years ago, and you're a

175- pound man now. What's the difference?

And the different is the percentage of muscle mass that you've lost. So even though you're the same weight person, the percent of the muscle has gone down significantly, which means your strength has down, your frailty risk has up, and your glucose disposal has diminished and full risk increased.

We have to start to teach people early that this is an essential part of life. Absolutely. So to wrap up your three things. Muscle. Go lift some weights.

Body weight is sufficient. Number two, control insulin and inflammation. And you might even want to flip that. They could vacillate between one and two and both be 100% correct.

So, essential, get your doctor to run an insulin level. Get your Doctor to Run an HSCRP at a minimum. Demand it. It's not that expensive. A lot of doctors will give pushback to patients because they think that Medicare, for instance, or if you're 65 and up, won't pay for it, they're not expensive tests.

If you do have to pay them, it's it's low cost. And so the value of having that data is indispensable. So get it done one way or another. Dysfunctional insulin leads to increased inflammation.

I'm not trying to do it all at the end of the podcast, but inflammation is really inflammation from the inside burning us up on the outside because think of inflammation as fire.

I can cook my food if I properly control the fire. I could burn my house down and blow my whole block up if i let inflammation run awry. That's right.

The two things that are going to happen in life to all of us, like it or not, is as we get older, hormones decline and inflammation increases. Knowing those two facts, leads you then to what can I do to change the trajectory of that process.

What's your third tenet? Train your balance at all costs. Stand on a leg daily. Brush your teeth standing with one leg. and work on that. Do it with your eyes open, do it your with eyes closed.

But even if you did it, with you eyes opened only, Do It Often. If you can go to the gym, there's different exercises. You can on to YouTube. There's tons of stuff that's out there that you could just watch and it will give you great applications that are not difficult.

not talking about like having to hire a trainer and do all kinds of things and having expenses that you can handle. This is just about you prioritizing things that are important for your life and your longevity.

So when you walk, You can turn your head left and right while you're walking in a straight line. You could do it in the hallway of your house. This is excellent nervous system training.

So these are things. One last thing on the balance that I find so important in training with it is the definition of a fall is a trip or a stumble one cannot recover from.

And what that translates into is you have to be able to put the brakes on. No one rarely falls going up a hill. It's going down where the problem is. So even if you step off a curb, let's call that going-down, because a lot of people fall from something as small as that.

And there's two types of muscle fibers. There's slow twitch and fast twitch, right? So, fast Twitch is type 2 muscle fiber. That's what puts the brakes on.

that's What prevents the stumble or the trip. As we get older, not only do we lose muscle mass, but we loose fast-twitch type-2 muscle fibres. Training them diminishes their loss.

And so, again, This is why exercise and muscle activation is so essential, because in the end, independence is the real endpoint. So this is all under the funnel of lifestyle, which we talked about at the beginning.

These are all lifestyle tenets. Certainly is. They are absolutely tenents. And listen, we could have chose many others. But you have to prioritize the ones that you see are the most impactful, based on how deleterious they are, if you don't pay attention to them.

Lift weights, watch your insulin and inflammation, get some balance training, and without question, modify your stress, eat a good diet, we didn't even go on a diet.

Food is information from the outside world. Good food potentiates health information, bad food potentially. Inflammation, so it's under the inflammation.

Absolutely. Any parting shots? Longevity may not be the exciting term, but it is muscle. It is metabolic control. it Is inflammation management. Its sleep, its neurological stability.

Biohacking sometimes is marketing, but physiology is medicine. There you go. Enough said. Dr. Loren Marks, Dr Rob Silverman, Proof of Health Alternatives, always yours in health.