Introduction to Morley Robbins and mineral health

Welcome back to the conversation, everyone. Today I have the esteemed Morley Robins. Hi, Morley. Hello. I'm delighted to be here. I just really looking forward to our conversation.

It's going to be a fun one. So for those of you who don't know Morley, he is the creator of the root cause protocol. You're also known as magnesium Man.

It sounds like a superhero to me. And this is because you're an expert on magnesium role in the body and that delicate dance between magnesium, iron, copper and calcium.

Which blows my mind we were before we jumped on this interview. I was telling you that I've, you know, interpreting a hair tissue mineral analysis test is mind blowing to me.

And you're an expert in that TMA and that's one of the things we see played out on that test is this dance between these minerals. So let's talk about this.

This is all about minerals today. And can you start out by sharing with us how energy is really made in our tissues, organs and cells? Because I think you have a different perspective than some of the experts we're bringing on this summit.

No, I mean, what it really comes down to, it is on a planet where 21% of the air we breathe is. Of course, it's called. It's called oxygen. Oxygen can't live without it. Right.

But we can't age without it either. And so most important, from my standpoint, the most important enzyme transaction is taking place inside our mitochondria, and it's where oxygen is transformed into water.

The O2 molecule becomes two molecules of water, and when that happens, think can only happen at the age of seven. That's significant. But when that happens, it releases three precursor energy molecules called magnesium ADP, and they go over to complex five that kills by another copper enzyme and become magnesium ATP.

And this is happening at an outrageous rate of 9000 RPMs and what's what's hard to imagine is the millions and millions and millions it's actually 40 quadrillion mitochondria in our body.

How mitochondria make energy

And these these organelles are humming at this outrageous rate of 9000 R. P. M.. And nobody thinks about that. Nobody thinks about what does it take in order to oxidize the fuel that's coming in through our diet and that that's really why we're here is that we were able to increase the energy production of carbohydrates and fats and things like that when we were able to oxidize it, when we're able to burn it in the presence of oxygen, and you can't do that with our copper.

It's like, wow, that's amazing. And so the the person who understands this at a subtle level is he's up at UPenn. His name is Douglas Wallace. Brilliant, brilliant individual.

He's the guy who figured out that the mitochondrial DNA flow through the mother. He eventually will get a Nobel Prize. But he's famous for pointing out the fact that in conventional medicine, no one talks about energy efficiency.

No, they don't. You know, morally, I worked in Western medicine for 20 years before I finally retired and stepped fully into the functional integrative medicine space.

And I don't remember, you know, in physiology, we talked about mitochondria, we talked about the Krebs cycle and

ATP energy production. But it's never a focus in how we help support people heal from any condition, from a broken finger to an infection to something more chronic going on like an autoimmune disorder.

We're not talking in Western medicine about energy production as part of the solution to restoring and healing your body and slowing down aging. It's a problem.

And I think one of my one of my colleagues has a great phrase built on some of the things that I teach. He said Iron is a recipe for aging. And what people don't realize is that iron is accumulating in our body from the minute we're born to the minute we die.

And the iron biologists all seem to agree on it's about one milligram a day. So take your age, you multiply it times 365, and that's the number of milligrams of iron you have in your body. Why?

I just turned 70 last November, so I've got 25,000 milligrams of iron coming through my body. I'm supposed to have 5000 now. And so people don't realize that this dynamic between copper and iron is really important because iron is a waiter bringing the oxygen.

The copper is the chef transforming the oxygen into water. Okay. I want to I want to unpack this more. And I just want to say something on that Iron Note real quick.

So in the beginning of my career in medicine, I worked in a clinic where they were running a research study for hemochromatosis. And so this is a genetic problem where you hold on the iron and it rust out your whole body.

And so basically. And so what I what I learned from that was one of the healthiest things you can do. And even if you don't have that condition, is go donate blood.

You can it lowers it, offloads that iron from your body. So so this is a pearl for you guys. Go donate blood. It's actually really, really good for you.

Yeah. No, it's it's essential for men and for women after their menstrual years. But even during during menses, women. And I recommend they do it once or twice a year.

And people just don't realize how important it is to cleanse the body and and really force the body to jumpstart the production. And we can get into some fascinating discussion around it.

But it's a very important process of recognizing that every facet of iron metabolism is run by copper. Okay, so let's talk about copper because here's the thing morally.

Like even, you know, when I'm when I'm looking at multivitamins, you can buy them with copper. Without copper. Like it makes a it's a big advertising point that there's no copper in this.

And it sounds like probably we're not getting enough copper.

Iron, copper, and aging

So why is copper so essential to our health? And could you speak into I'm assuming we've got a huge deficiency of it in our population like this is a big problem.

Right? Well, there's there's only four things that copper does on planet Earth. It creates energy. It clears exhaust, it catalyzes enzymes, the most important of which is called the PAM enzyme.

You may never have heard of that. And it's just it's a blockbuster. And the fourth thing that a copper does that no one was talking about over the last three years, which I find entertaining, is copper combats, enemies, bacteria, fungus virus and parasites all cave in the presence of copper.

When. When did we first know this? 5700 B. C.. So, you know, we don't know what in the modern era, but it turns out that copper is why we have life on this planet.

And if you talk to the leading experts on copper metabolism, someone like Joseph Prochaska, who's now retired, is still a very big figure here. In 2011, he had a famous study done where he identified 11 copper enzymes in the human body.

Well, I found I found a really hoity toity article about plants. Last time I checked, I think we're more involved than plants. And this particular study identified 300 copper enzymes in the plant kingdom.

So we're like, okay, Dr. Prochaska, let's talk about humans again. So it's probably thousands of enzymes. I've never seen a number that made sense to me. But.

But there's a hierarchy. And like the print that's hanging above my head, there's hierarchy and and coppers at the top and the reach the copper has in the world of traditional Chinese medicine they call copper the general.

An iron is called the foot soldier. If you really stand that concept picture of the Battle of the Bulge without General Patton, December 26, 1944, would have been very different if he hadn't shown up.

So people don't realize the impact that this mineral has in the a meme that runs medicine is your anemic and your copper toxic. And that is 180 degrees from the truth.

And I've been reading steadily for 14 years, 2 to 3 hours a day. I'd probably read maybe 7500 articles. And I can honestly say that that meme is a complete and outright lie.

Okay, so let's repeat that. So iron deficiency caused by copper toxicity, right. Is not true. No, not even. Not even remotely close. And what about and I'm assuming that this is one of the reasons that copper is not popular, that people are concerned about it, because western medicine has been saying, you know, copper is a problem.

And something else is that iron anemia of iron deficiency is. Okay, unpack that. So I learned I mean, I learned in Western medicine how to interpret a CBC and how to look at a micro macro, small cell size anemia and and identify that with iron deficiency.

So micro psychosis versus macro psychosis with the with the size of the cells. We're in a hall of mirrors right now. So the number one element on planet Earth, 36% of the Earth's composition is iron.

And prior to COVID, I would have argued that humans were the most evolved species. I'm not sure now because it's so questionable. But. But the point is to believe in iron deficiency anemia, you have to accept the following premise that the most evolved species on the planet has lost the ability, the natural ability to metabolize the number one element on the planet doesn't pass the smell test.

And what's missing is the truth of the research by probably the most important would be Max Weintraub. He was originally at Hopkins, and then in the fifties, he headed up a just a premier team of experts at the University of Utah Medical Center, and they did 32 experiments over a like a 25, 30 year period, basically proving that copper regulates iron.

And most people don't know that. And so the the challenge is that a lot of the doctors who have a lot of influence on the planet have an M. D. degree, but they don't know what the degree stands for.

In my world, it stands for mineral denialists, and they don't understand the power that these minerals have at a metabolic level, the enzyme level. And and what is particularly not understood is what happens to these minerals under stress, whether it's acute stress or chronic stress.

And there's profound changes in mineral status in the body.

Why copper matters and why it is overlooked

And there's two whole fields of research around that. And where I cut my teeth, as you mentioned, I know people call me magnesium. And I really studied the impact of stress on magnesium status, thinking that all we had to do was reverse the magnesium.

You can you can you can drink bucket full of magnesium. And you're not going to correct the underlying physiology and to connect those minerals that you mentioned at the beginning, the biggest stressor on the planet, it's called oxidative stress, is when iron interacts with oxygen.

We call it rust. When we're not in a clinical setting. But oxidative stress is very powerful. Well, there's only one element on the planet, only one element that can regulate both iron and oxygen at the same time is called copper.

And that okay, morally, I'm going to ask a question that it's just burning in me right now. And, you know, where people might might this might turn people on and it might turn people off.

Yeah. But I don't care. Just go for. It. Because disruption is important. Why is it that the medical community is not sharing this with us? What are they hiding? No, no, that one.

I'm glad you asked the question because when I first started to learn this, I got really angry thinking that what you just said was true, that they were not taught this or that they were taught this and they were withholding it.

And it was, my dear friend down in Lubbock, Texas, Ben Edwards. He said, whoa, hold on there, cowboy. We said we were not taught this in medical school.

So I guess my question would be, why isn't it taught? So let's take it now. That's a different one. Yeah, that's. A good one. I really meant, is Whiteman's information withheld from the most trusted people on the planet?

When your doctor tells you this is what's going to heal you or help you, I mean, truly, some of the most trusted people on the planet, why are they not being taught this?

Why is this information withheld when it's been known for so long? Do you understand the business model of Big Pharma? Yes, I do. Let's go there. Well, I prescribed Marley.

I prescribed drugs for 20 years. I was armed with my prescription pad for 20 years. And that that's a very powerful and profitable industry. Right. So a lot of money, power tied up in that industry, right?

Mm hmm. And so the way I typically describe this with clients, I'm sure you've seen the movie Star Wars. I am a Star Wars junkie. I saw Star Wars on the big screen live when I was five years old.

Oh, wow. That's impressive. Okay. I was one of the people who saw it live. And I remember double feature, Pete's Dragon and Star Wars. True Story. Wow. All right.

So who's the bad? Who's the bad guy in Star Wars? Darth Vader. Right? What colors is out in black? Okay, what what's the color of his army? White. Right, right, right.

Okay. So in the modern world, Big Pharma is Darth Vader, and who's their army and white. Doctors, nurses, all the pharmacists, physical therapists. Exactly.

And so, you know, what's the what's the origin of the word pharmacy, pharmacy, pharmacopeia? It's Greek for witchcraft. What's black is white. What's white is black in.

We live in a very entertaining world. This is entertaining and polarizing. And a lot of. That's an important word. Polarizing. Yeah. What what really changed in the 19 well over the last century has been the profound change in three major spheres of influence farming, food processing and pharmaceuticals and what people don't realize is the

lengths that those industries have gone to, to lower the availability, especially of copper, and to increase the availability of iron.

And I didn't believe it at first, but it's undeniable once you get into the literature and you start to study the developments like 1941, that they're adding iron filings to the wheat flour in the dead of night.

And so it's like and this is very well chronicled. This is not me like being a big conspiracy freak. But the thing is, in 1928, two different noted teams studied what happens if we withhold copper from an animal in their diet?

Mm hmm. What happens? So in March of 1928, at the University of Wisconsin in Madison, in May of 1920, University of Kentucky, what they discovered is that when you withhold copper, iron accumulates in the liver, what's the battery that runs that human body?

It's called the liver. The liver is our battery. And there's a very specific lobe of the liver. If you you certainly would understand this from your days in anatomy, there's a fibrous membrane and there's this little triangle's lobe.

Well, that lobe happens to be where a very important copper protein is made called Swallow Plasmon. And I'm sure that that word was used extensively in there, correct? Yes.

But but what happens is that under copper depletion, iron accumulates in that room and then blocks the ability to make that protein. And what people don't know is that that protein is profoundly important.

It is the it orchestrates our immune system. It orchestrates our response to oxidative stress. And it's critically important. And I think your question is really valid.

So why don't we teach this? Well, I think the only explanation is it would eviscerate the business model. Yes. Basically what it comes down to. And and it's that we can we can get all worked up about how evil that might be or how unfair that might be.

But the reason why we're having this conversation is to make more people aware that there is a whole nother paradigm of feeling and they have a choice.

They do. As they learn about this paradigm, then they can begin to take greater control over their health. So have so many questions now that we're going down this road.

So I can't imagine trying to do this in 30 minutes. I know. I know. So.

How modern farming and food processing deplete minerals

So copper is so important. Now, things that are coming to my mind are copper pipes. Used to be used to pipe in water to our homes and now it's PVC pipe.

So we're not even getting our water in copper pipes anymore. So, I mean, copper is the system radically being removed? The price of copper, it's so expensive.

I mean, just to buy copper. I mean, I know this because my husband is a landscape contractor. And so you can put in you would never put copper pipes in a landscaping because it's too expensive and it's even not even used in homes anymore.

So the places where we may have gotten copper into our into our water source and into our diet, those are systematically being eliminated. The supplement companies are offering vitamin multivitamins without copper.

So how does one get a clean, good source of copper into our bodies knowing that we're here on the Mitochondria Energy Summit? And you've already established the significance and importance of copper?

And I know people are thinking, well, how do I get it? What do I put in my body? What do I do? Well, real quick, I mentioned two things that are blocking it, and then I'll mention things that we can do to correct it.

Historically, copper, dominant food as it was found in the soil and what really important nuts and seeds, organ, meats, mollusks. There's some very important lentils, very important sources of copper.

Historically, what people need to know, though, is today any food that is GMO was historically a rich source of copper, but not anymore. People don't know about the mineral killing ability of glyphosate roundup, and you have to think logarithmic plate.

And there's a scale that glyphosate yields magnesium and a two zinc and a six copper and a lemon. Oh, my gosh. What does that mean? Means that it cured copper a billion times faster than killings, magnesium, and a hundred thousand times faster than a zinc.

So by phones, it has basically shuttered access to copper in soil, building on many decades of using npk people didn't know that A. K. A was blocking copper uptake in the root system.

And then we have. Something is a.k.a a pesticide. A.k.a is a fertilizer. Fertilizer. Yeah. And then we have something in the early eighties where there was an introduction of high fructose corn sirup.

Mm hmm. It's a very it's a very inexpensive form of sweetener. But people don't realize or don't aren't aware of the fact that there's a of every cell has a front door, a lot of copper in, and that doorway is called c tr one, copper transporter one and what is high fructose corn sirup?

Do it inhibit that front door so copper can get into our system on top of the fact that these plants are being denied access to copper and people don't realize the compound effect of all of that.

And then you put on top of that chronic stress 2020 through 2022, people don't realize how metabolically they were changed by the production of adrenaline and cortisol and what that did to their copper status and their iron status.

That was not healthy for their metabolism overall. Okay. So what do we do to solve it? How do how do we get this into our body? So now you now you, now you gave me a whole nother thing to ponder on.

How do we open the door that it needs to go through because it's been closed by? There's not a person watching this interview right now that hasn't had high fructose corn sirup in their food in a big way.

They're there is just not possible. You've had it at some point in your life if you've been alive since the 1980s. Well, I decided to do my small part.

I wrote a book called Cure Your Fatigue. And what the book does is in the front half, it explains the problem. I can't explain how to solve it. And there's a series of stops and starts within what's called the root cause protocol.

And what I think what you have to be really careful about now is you have to be pristine about your diet wherever possible. You need to be eating organic food.

If you if you can establish a relationship with a regenerative farmer, you want to you want to do that because you want to be working with practitioners of the of the farm who really understand the importance of minerals in the soil, because it's going to influence the minerals in the plants, which is going to influence the minerals in their animals, which is going to ultimately impact the minerals in humans.

So you've got to be really careful about what you eat. You've got to manage your stress. I firmly believe in emotional release techniques. If your emotion code or EMDR, people don't realize how powerful our negative emotions are to eviscerate our minerals, and then we've come up against the wall of substance.

I don't recommend dietary supplements like one a day supplements per se, because they're just the ratios are

wrong and the forms are wrong, at least in my experience.

But but what I think is important for people to do is I think there's three supplemental forms that people can use for copper. There's copper hydrazine that's made by the folks that make sovereign silver sort a really cool liquid form of copper.

There's a cream made by the Lauryn Pickard was the founder of reverse skin aging dot com and it's an amazing form of copper that goes through the skin and the body loves to to grab that.

And the title of the company should give you an indication of how important copper is to stopping aging. We hear and then my, my response to COVID, which I actually renamed it what CRT ID stands for.

So CLV stands for Copper's Vanished and it stands for IONS Disregulated. But my response to that and people don't realize that was just those two metals that were in play, but we don't have time for that.

Stress, fear, and mineral depletion

But I developed a copper product called Recuperate and it's available from IQ supplements, Formula IQ supplements and it's got this glass and it's a copper, this glass made with spirulina and desiccated liver.

It's a really, really cool product, but what makes it special is the viscosity. People have this raging debate about copper one, copper two. Oh, what's what's better?

What's more, what's safer? Well, this is copper zero. And it's immediately admissible into the body and into the cell because of that. So I think there are a variety of ways for people to get this mineral.

But I think people need to understand first how important it is, how outrageously affected it is by our modern food system and pharmaceutical system and farming system.

And they need to really understand the impact that chronic stress has on it locks up copper. And if we had more time, I would be delighted to explain it.

But the bottom line is cortisol is no friend to cover. Well, I do want to I do want to go there. So I have so many questions. We need to do like five interviews.

Or that whole plan that I. Know. I know. I would love that. So so in terms of this stress, I mean, there they're in my lifetime, there's never been a more stressful time.

And, you know, I'm 50 this year and I look back at all the stressful things that my generation has lived through, everything from, you know, the Gulf War all the way, you know, into 2000 when we had the attack on our country in the World Trade Center, falling insurance.

And, you know, there's just so many small things that have been terrible in the in between here for Americans. And, of course, around the world, there's been even more devastating, catastrophic, terrible things that have happened to humanity.

But this has been nuts morally. This total. The level of an absolutely by design, the level of stress that has been doled out to us. But we're here. We're here because we're strong enough to handle it.

We're here to learn our lessons. I in this very intense stress and I'm not defending it. But but we also have to you know, when you look outside, you have to realize that it's a video game that's playing and you're part of a video game.

Right. And the and the Matrix was not a movie. It was a documentary. Oh, for sure. Yeah. And so we're just going to kind of step into that reality. And I think one of the most powerful things anyone ever said was Fritz Perls,

famous psychologist.

Nothing really matters, but we must act as if it does. And it's just it's a very important recognition that we're here to do our work. And I'm blessed at this point. You know, I'm just a 20 years older than you, but I'm blessed to do my life's work.

And so I can't tell you how excited it's been for the last 15 years to really step into this and what people. It's an exciting time. I feel like people are questioning what they've always thought and they're making up there.

They're wanting other solutions. Right? These solutions are taking a foothold. I mean, tens of thousands, if not 100,000 people are going to watch this interview.

And this is going to be impactful. This is going to be very impactful for people. So on the stress note. Yeah, and stress depleting copper and also on that note of opening the coast slam door.

So I picked up corn sirup, slammed the door. Can we can we give some solutions there? So obviously de-stressing is important. And if you live in a household like I do where my husband is obsessed with the news and it's on constantly, and I mean, he's running around saying we need to buy more.

SILVER Have you seen the price of silver or the American dollar is going to. It's everything we know is going away. I mean, there's going to be massive decline.

So this is like in my house all the time. No, I get it. I, I am plugged. The TV in July of 2008. Yeah, but I can't because he won't unplug it. So for people like me who live and love somebody who wants to have that on what do you what's your advice for us?

I mean. I regularly I regularly advise my clients and my students to engage in emotional freedom, technique or emotion. Come. And it's so important to so so what happens is we have this all this stress.

We reenter the realm of fear. Now, I smell fear differently. It's actually heightened air. So we see the symbol for iron. And what that word really means is iron activates rust.

And that's really that's what it does. Yeah. For those you don't know on the periodic table, iron is F E right. Yeah. And when you're in a state of fear, you become a magnet for iron.

And that's the power of adrenaline because when you're in a state of fear at the adrenaline's coursing through your body. And adrenaline is has a very powerful impact on iron metabolism.

On the flipside, when you're in a state of fear, cortisol is being released, which is all supposed to be recycled back to cortisone. That requires magnesium.

Well, if you're burning if you're burning up sympathetic overdrive, you've got magnesium is going into the toilet as fast as you can imagine. And so there's no magnesium to get you back to cortisone.

Cortisol activates a very important protein called Metallo thiamin and the talent, and there's a 4 to 5 fold increase in metallic finding under chronic stress.

Again, think 2020 through 2022, three years of intense immobilizing stress. So Mattel finding no binds up copper a thousand times stronger than it binds up zinc is like they're not even in the same camp.

And so it's important for people to realize that when you are in this chronic state of stress, fear is building in your body. And you've got to be mindful of that.

You've got to release that fear. But you've also got to be very careful about the food you eat. And you got to hone in on another important four letter word called sewer.

And I spell that differently. C new hyphen r e and the SIU symbol for copper regulates everything. Copper regulate everything. And that's oh, these are amazing little, little acronyms that you come up with.

Yeah, but, but I think what they do is they help people rethink and reprogram their mind so they can deal with their stressful environment. All right.

And that's really at the end of the day, we're here to help one another deal with this stress and to learn our lessons. And, you know, I think actually the for Fritz Perls, probably the most factual statement on the planet was by William Shakespeare.

All the world's a stage and we are merely planners. And there you know what? There is a play and we didn't write it. And I don't think we're going to change the play.

Restoring copper, magnesium, and retinol

But what we can do is help each other get through them. We can't change the play, but actors can adlib and they can add their little spit into it despite the director because it's happening live.

So when you have power, that's well. And that's why I wrote the book and that's why I love to have these types of conversations, because it's my provocative way of sticking the bear in. Yes.

Well, can we bring it back to magnesium? So you were known as you were known as the magnesium man and U. S. that then you put together that copper was really essential for this.

So I mean, I, I run organic acids on people. I'm looking at the electron transport chain where we're trying to figure out the Krebs cycle. We're trying to figure out like what's happening there, what's missing.

We know magnesium as a cofactor there. And so, you know, people are taking magnesium night and day. They're taking it orally. They're taking it topically.

What is what are your tips and recommendations? If you know somebody has magnesium deficiency, what's the best way to solve that? It took me years to figure this out.

You want to if you want to stem the magnesium loss, you've got to deal with the iron stress, the oxidative stress and emotional stress. And and it wasn't just like suddenly there was this bulb.

It was like this is year long, years long process of realizing that if if iron and oxygen are not being properly regulated by copper, you're going to have more oxidative stress, which means you're going to have more magnesium loss.

And when you have magnesium loss, you're going to have calcification is going to rise. That's all those four minerals tiny together that the part that we haven't talked about, you don't need to go into a lot of detail if you want to make copper bioavailable really make it viable in the body, you've got to have retinol.

Animal based retinol is critical to load copper into its enzymes and it's those enzymes that work the magic. But the. Way we unpack that a little bit more animal based retinol.

Yeah so vitamin a people are familiar with beta carotene coming from the world of vegetables, but retinol comes from animals. And so again, think a animal vitamin A retinol and that nutrient was taken out of our diet in the 1950s when Eisenhower had his heart attack in September 24th, 1955.

I was a whopping two and a half years old, and I remember it. But but it's an important event historically, because that's when Ansel Keys took the diet hostage and said, let's get rid of cholesterol.

What people didn't realize is that when you take cholesterol with diet, you're taking retinol out of the diet, too. Okay. But retinol is this profoundly important nutrient and there's critical enzymes that are copper pumps.

There's ATP, 78, 90, 77 B makes through low plasma, which is that copper protein seven eight makes all the others. We don't know how many it makes, but most believe it will just say it's ten.

Just a minute, be polite to Dr. Prochaska. But the thing is what activate those pumps is retinoic acid, which is a metabolite that's derived from the breakdown of retinol.

It's a really big deal. I think that you. Can't get it from vegetable based. No. By something called retinol equivalency units. It takes 12 beta carotene to make one retinol.

Yet another case for eating animal products. Yes. And it's and and I don't want to get into religious wars of what diets are superior, but we are animals and we need to have animal protein and animal that.

I so I know we've gone down a lot of different tangents here. And I think our audience appreciates that this is completely unscripted and off the cuff and we're just going we go so one of my many careers was working in a metabolic bone disease clinic and osteoporosis clinic for many years.

And I and I prescribed all the big drugs for osteoporosis, and I saw thousands and thousands and thousands of patients over the years. And one thing that I saw over and over and over again was the weakest, most porous bones were those of vegans.

And and I asked every academic that I in the Bone World, I asked every academic, every nutritionist, everyone to connect the dots on this. And I will tell you that the research isn't done.

It's anecdotal. We see it, we know it. And this, in my opinion, is back to just the situation that we're in right now. Veganism is something that was created in my opinion, to destroy our health.

Yeah, well, there are certain cultures that do rely on it, but those to build on your point. The sickest client I've ever worked with was the vegan daughter of to lifetime vegan parents, and she was in a world of hurt.

I've got 25 vegan clients. They can desiccated beef liver. That's how desperate they are to feel better. The point that you're making about the bone. Anyone who has osteopenia and osteoporosis needs to listen up.

The mechanism to break down the bone matrix is done by a key enzyme. It's called acid phosphatase. Acid phosphatase is activated by ion ding, ding, ding and that's what causes the bone matrix to break down and become porous, as you're saying.

And there's calcium loss in that process. You can take a wheelbarrow full of calcium buckets full of vitamin D, and you will not correct the iron problem causing it because iron needs to be regulated by copper.

But if you want to build a bone matrix, you need alkaline phosphatase, which is activated by magnesium. It's a very important relationship. So here we are back at this conflict between iron and magnesium again.

But alkaline phosphatase is the catalytic agent to rebuild.

Bone health, osteoporosis, and calcium misplacement

But there's two other enzymes that are absolutely essential one is called lysine, oxidase, l y as well, and the other is called Ascorbate Oxidase. Both are copper dependent and both bring integrity to the bone matrix because when you're trying to rebuild bone, you need to be able to put together strength, collagen with flexibility, elastin, and they actually need to be knit together.

And that's what lysine oxidase does. And the and the part that I think is especially important is iron is the only element on the planet that can cause calcium loss from the hard tissue called bone.

And at the same time, iron causes calcium buildup in the soft tissue called our arteries. So if anyone has been told

that they have osteopenia or osteoporosis, they should run to the cardiologist to check their calcium score in their arteries because it's happening simultaneously and no one ever talks about that.

I am so glad we went there morally. And so what we're hearing loud and clear from this talk today is copper is essential. And so if you take anything from this, get copper into your diet and into you from a supplemental form and you shared a bunch of different forms.

Right. And the other big takeaway from this is how damaging stress is. And you gave us some wonderful resources to help reduce stress, because if I have to hear one more time that I should go meditate for an hour today, I'm going to punch somebody in the face because I'm on top of that.

So now the tension does not does not lower your stress. It calms you down, but it doesn't change the stress response. It's really important for people understand that.

And and, you know, yoga, there are wonderful exercises, beautiful ways of responding to the stress. But what we really have to do is release the stress.

And that's where these different modalities are so powerful. Thank you so much. Any final word you'd like to leave with our audience and also tell our audience where to find your book, where to find your proper supplement product.

Again, make sure our audience knows where to reach you. Yeah. My website RCP 123. org. There's a Facebook group that deals with magnesium advocacy group and then there's another group that just deals with the root cause protocol.

So you can find either one of those. The book you can find with any online bookseller, you're not going to find it in a physical book bookstore, but online, lots of different sources.

There's an e-book version and there's also audible. A number of people have told me how much they've enjoyed having the physical book and the audio at the same time.

Oh my gosh, I can do that all the time. So I have the audio book thinking, this is going to save me time. I'm going to I'm going to listen to this while I'm doing other things.

And then I get into it and I realize, Oh, I really want the paper copy of that book because I want to highlight it and I want to document and I want to put a sticky note in it.

And so I buy every book twice. That's my whole gig. Yeah. No, I think it's a really powerful way to learn. And then so I think people will enjoy that and it's actually doing quite well.

It's been in the top 100 nutrition books ever since it started its journey, which is just absolutely amazing. And and then the supplement, it's former Formula IQ supplements and it's called recuperate and people are supposed to be really impressed with my weight recuperate.

Resources, supplements, and closing remarks

Get it? Yes. But but what it does is it delivers the goods and it's actually part of a suite of products and people go there, they'll they'll find a whole bunch of other things.

But I think in terms of what we're trying to focus on, we're really seeking to enhance energy production. The biggest variable that no one talks about is the fact that inside every mitochondria, we're supposed to have 50,000 atoms of copper.

And that's the work of Paul Cobain at Auburn University 2426 Amazing studies. He confirmed the importance of copper at this organelle level and what's been lost to the ages is the fact that this protein solo plasma, which has

many different jobs and body, but probably one of the most important is it's a supply line for copper to the mitochondria.

And so it's just a it's a very important piece, a series of dots that people need to connect in order to understand how do I overcome this malaise that I'm experiencing?

And if you've got any kind of fatigue or energy deficiency, well, you need more copper. It's pretty, pretty obvious. Thank you so much more. This has been so enlightening.

It's great. We really appreciate the opportunity. Mark, I just want to acknowledge you for the work that you do in the world and for the legacy that you are leaving to this world someday.

Thank you for being here and sharing your wisdom. I am so grateful. Well, thank you for the opportunity. I appreciate it. Yes, sir. Take good care now.

Okay, bye.