Introduction to PMF and EMF

Welcome to the Peptide Summit. My name is Doctor Matt Cook, and today I'm with Doctor William Pollack. And we have a whole bunch of mutual friends. He's a thoughtful, wonderful doctor who, I've been impressed with.

And I wanted to, use this as an opportunity to introduce people to something called PMF, which is a, Well, let's just get into it. Tell us, what is PMF.

All right, well, let's talk about mag. So PMF stands for Pulsed Electromagnetic Fields and electromagnetic. So that's the basis of it is magnetic. So you can have magnets that are fridge magnets or little horseshoe magnets or bar magnets, things that stick to fridges and metal.

Right. Those that's those are what we call static magnets. They're permanent. They have benefits on the body as well. If I had that discussion, we were talking about acupuncture, how magnetic fields can affect acupuncture points.

So static magnets applied to an acupuncture point affects the acupuncture point, just like needles do. Or electrical stimulation does. But they're static and that means they don't.

They don't penetrate very deep into the body and they're hard to move around. And if they move around, they have to be in one place long enough to make a change in that tissue to affect that tissue.

So ultimately, static magnets have significant limitations. On the other hand, if you take a magnetic field and you move it, you start moving that magnetic field in out of the body, for example, then that magnetic field is now very dynamic.

So as opposed to a passive field, now you have a much more dynamic field. The static magnet interacts with the body. But everything's in motion in the body.

So you're relying on the motion of the body not the magnet. And as the body's motions pass through that static static magnetic field you get, then you get some action.

Pain relief is one of those actions and tissue reduction, swelling reduction and so on that works. But pulsed magnetic field fields that pulse rate through the body in and out are much more active.

Let's get rid of the elephant in the room right away. And that's PMF versus EMF okay. All right EMF is Wi-Fi and cell phones and all that. And all right call environmental magnetic fields.

But they are electromagnetic fields too. They're just environmental. They're made differently and they're made for different purposes. So they don't account for biology.

The people who made those cell phones, Wi-Fi routers and microwaves are blasting through the atmosphere. Their interest is not biology. They just cross their fingers.

It doesn't affect biology, which we know it does, but that's different. A past magnetic field. So, an EMF is broadcast by a power, a microwave tower into the atmosphere, and then it lands on whatever's going to receive it, just like radios or televisions does.

They're on the airwaves. And then there are receivers and receivers. Take that signal, transform that signal, and now you hear it, or you watch it or see it or whatever.

But microwaves are the same thing. They're just broadcast into the environment. They're what we call open field. No magnetic fields. They're open pulsed magnetic fields, on the other hand, are produced by a current flowing through a wire.

And we call that the right hand rule. My my thumb is the current, the direction of the current. And the magnetic field is developed that's perpendicular to the flow of that current.

So every time that current pulses the magnetic field gets created, that opens up, it collapses back on itself. It's called a closed loop. It doesn't get broadcast in the atmosphere.

It's restricted to the environment of that wire. Now the current can determine the size of that magnetic field it's produced. So a very weak magnetic field, very weak current.

It's going to have a very tiny little magnetic field. Power lines clearly are producing magnetic fields. They're huge because they're very powerful currents.

And those power lines fortunately they die off with distance just like all magnetic fields do, just like sun does, and sound and heat and cold.

Acupuncture Origins and Magnetic Therapy

So but basically a pulse magnetic field that is a current in a wire is producing a magnetic field around the current is shielded as opposed to tens machines or electrical stimulation where it's touching the skin.

It's not shielding. You're doing that on purpose. You're basically electrocuting the tissue to control the electrocution. Hopefully. Right. Magnetic fields don't touch the skin.

They go right through. They're shielded. They go right through the shielding right into the body. And we use that principle. Then that magnetic field passing through the body then has all kinds of actions in the body okay.

There's a primary intersection between those. That's perfect. So then we're going to get into all of those distinctions. And my logic we've been interested in PMF and I think it's it's a great tool.

And and on my journey of integrative medicine for the last 15 years, one thing that happens is everywhere I go and all the clinics that I visit and the people that I meet and see one.

One common theme that you see almost everywhere I go is people working with, PMF, from from big expensive units to little, you know, handheld units that people use.

And, so I've been very interested in it. Now, you're a clinician, you're a family doctor, and we have some of the same training. I did the, Helm's acupuncture course. In, I don't know, 2003 or something like that, but you did a little bit before me.

I finished in 2000. Okay. Oh. Oh, so we're great about that. Yeah, we were probably. We were like, some years apart. Yeah. Okay. So, and so then that was, that was.

And then tell me, tell me how, your experience of that and how that kind of led you into, PMF and how you kind of got going in your clinical practice.

Because I'd like to hear about that. What got me into acupuncture was I was a medical director of, somewhat of a group of family physicians in, new Jersey.

I had the I had developed 14 a practice actually was a multi-specialty practice that my group was founded, Madison Family Practice. And we had 14 family physicians in that group.

So it was the biggest group of family physicians in the whole East Coast. Back back then back in 60, 69, 70. But, you know, we all shared patients. We all rallied around each other's patients.

We had our rotations and so on. And in a very short period time, we had two patients. I almost died from GI bleeding. And the commonality for those patients was ibuprofen.

Right. One almost died and one was, you know, very, very sick from it had to have a, partial gastrectomy. So I said, this is crazy. This is crazy medicine.

You know, we're treating people for their pain with something that's going to potentially kill them and wipe out their kidneys. Our cause, GI bleeding or whatever other problems.

I said I have to find other alternatives. And I looked around at my peers, looked around at my specialists like consultants, and saw they didn't have any better solutions for me.

So I said, obviously I have to go outside the house of medicine. Medicine is not going to give me the solution. And I knew about acupuncture, so I said, okay, I'm not going to really step outside the house of medicine.

I've got to really step outside my group. And they're going to they're going to go like stupid man, you know, or you know, this is not right. It's not good medicine.

Anyway, I did it. And unfortunately in 1990, nobody wanted needles. I couldn't convince patients to do needles as much as I explained it. Try to explain and explain. Explain.

It wouldn't do the needles. And so I said, well, how can I do acupuncture without needles? And discovered in the Orient they were using magnets. There were other ways to do it as well.

But I focus on the magnets because now I could put a magnet on acupuncture point, or put it on the ears, or put it in other places of the body and and lo and behold, you get benefits.

It's not as powerful as a needle. Not not necessarily. And it's not as powerful as electrified acupuncture needles. So you and I were trained in electrical acupuncture.

That's right. Electro acupuncture. Yeah I love it. I actually I, I still love that as a modality because with that basically what happens is you take a whole bunch of needles and you daisy chain, you basically hook electricity up and it basically runs an electrical pattern through muscles and I found that to be extremely helpful for relieving muscle spasms.

Absolutely. Especially for the best, especially for back pain. Absolutely. No question about it. Plus a whole bunch of things, all the things that it does with the acupuncture system.

What I discovered along the way that the acupuncture system is actually a DC current system. Okay, it's DC correct. And we know that acupuncture points have little wells in them, right?

That they, they have reduced, resistance to electrical stimulation. So that's electrical. What about the meridians? Well, it turns out that people have done studies now and proven that magnetic field, that basically it's a DC current system.

And when you have current of any kind, magnetic fields and current go together. Hence electro magnetic, you cannot separate the two. And so then just for people who are listening to this with the, at a high level, imagine that there's a, organ and then an organ in the body has a fairly significant electrical charge because, by concentration of mass, and, the electrical charge creates an, the idea is, is creates an electrical field around that organ.

Right. And then that the, that field is mapped onto the body and then it is mapped. And where it maps onto the body is where the meridians are. Correct.

Now, the, the but there's not an electrical field. Oh yes. Right. It's magnetic field. It's a magnetic field. That's right. So then, so then this got you into the idea of trying to basically use an external source to map a magnetic field onto the body, which is the EMF.

Correct. But what sort of went beyond that once I started using the magnets on a regular basis? You know that we know that we we put a magnet or a needle into a point pain point, and it's going to do some stimulation to that pain point.

It's going to increase, circulation to the pain point. It's going to cause a wheel response, but basically a healing response, an acute inflammatory response as part of the cell injury process.

Well, I would put them I, I've put magnets on parts of the body or points of the body where there weren't acupuncture points and there were still tissue effects.

And so then the question becomes, what's it doing? Why is this happening? And you go back to electromagnetic, you know, lo and behold, down the road I discovered pmfs or magnetic fields have all kinds of other actions beyond acupuncture at a physiological level.

And I found out basically that acupuncture works a lot more indirectly. It acupuncture doesn't really work so well at the cell level. It's a much more indirect approach and magnetic field therapy because it does acupuncture.

If you happen to overlay an acupuncture point or meridian you're getting that benefit anyway. But at the same time you're getting the direct cellular benefit of the.

So tell me about your perspective on the cellular benefits of magnetic fields.

Cellular Healing and Bone Repair

So all, all, cells that are not working, all organs that are not working are subject to what we call cell injury at the cell level, their damage in some fashion, whatever the cause, heat called, toxicity, burning trauma, you name it, whatever the cause of the cell injury is.

And when the cell injury happens is a whole cascade of events that happen in that cell. And you can obviously multiply that to the cells in a tissue locally, a spider bite or a wound or a burn.

So what you get a wound, a cut. It's no it's not one cell now. It's a collection of cells. And there are different degrees of injury to the cells in that injured.

If you can impact that cell damage process the cell injury process early in the process, you stop it from crossing the Rubicon. You stop it from crossing the the line of no return there, get you get to a point of irreversible injury.

And when you get to the point of irreversible injury, then you have you can eventually at some point, you might be able to see it with a naked eye. Certainly a cat you see with the naked eye.

But if you look at it in terms of microscopes and electron microscopes and CT scans and MRI's, and you can drill down to a to much more almost at a cellular level, now you can see what's happening directly at that tissue, and then you can see the magnetic field effects at those at those levels.

Again, if you start early in the process, you could reverse the damage. Once it's irreversible, apoptosis kicks in or necrosis kicks in and it's very hard to recover it.

But one it's rarely one cell. As I said it's usually collections of cells. So you have degrees of cell damage in the tissue. And again the cells that are going to die they're going to die.

But you want to get to the cells that aren't going to die, but they need help to, to, to do their processes and recover.

So for a good example is a nonunion.

It's a fracture. The one here, the body has done everything it possibly can to heal that fracture in six months. If it hasn't healed, it's called a nonunion.

So pmfs, it could have been nonunion for seven years and start PBF therapy all of a sudden the fracture starts. Healing has completely solved injury. And I'm glad you said that.

That was literally my next question because I, I've personally had probably 40 or 50 cases of of either reviewing a chart or talking to someone or meeting someone who had a nonunion, of, fracture.

And then PMF helped them. So tell me, tell me what's going on from a magnetic field perspective with a bone that broke and didn't heal. And then what happens with that? How?

What's the process of that healing? Well, first of all, you won't be able to recover that bone if the periosteum is destroyed. So what happens is that you need the periosteum, because that's where the, osteoblasts come from.

The stem cells come from. So you need to you need to stimulate stem cells basically to, to cause that bone to start growing again. But you have to decrease the edema.

You have to improve circulation. So I need angiogenesis. You need steps to stimulate the stem cells. You need mineralization. So the whole bunch of processes that have to happen at PDFs impact all of those in the sense by providing more energy to the cell.

So the cells in that area, they now have more energy, they can produce more ATP, the chargers, how does that how what's the mechanism of the more energy to the cell?

It's electrical. So basically it goes back to Faraday's law when you pass a current through ions, when you pass a current through, other charge flows in the tissues, then that activation stimulates that charge flow.

And that's called Faraday's law. So based on the intensity of the magnetic field, how strong it is, how rapidly it rises produces that slope going up on that on the waveform that slope increases charge in the tissue.

So that's inductively coupled electrical stimulation of the tissue. Now the tissue has more energy and then it activates all sorts of processes. So basically we we're fundamentally batteries.

And so when you run a magnetic field through a collection of cells that fundamentally has an electrical charge like a battery, you charge those cells up.

Hey. Exactly. That's exactly what we're doing. We're charging the cell work, causing the cell to make more energy. The magnetic field is not the energy magnetic field.

It's like the wind in the trees. It's just passing through. It doesn't get used up. It doesn't stop. Right? But passing through how? It's got the ions here, all of a sudden the ions start vibrating and they start vibrating.

They start producing charge. And then you have your ion cyclotron resonance. You have all kinds of physical phenomena going on that causes charge to build up in the tissue now.

And that charge is now used by the tissue. So I cell is damage. We know that right on the outside of the cell, the charge on the outside of the cell becomes compromised.

There's too much negative charge buildup. And that happens because the cell membranes are not working properly. So charge builds up, cell becomes sick.

Now you do magnetic field therapy. All of a sudden you open the membrane channels in that cell and everything

starts to equilibrate. And now the cell can produce more energy and can do stimulate DNA production, stem cell production, and so on.

And so and then so the the at a cellular level, those cells are getting healthier. There are some mobilization of stem cells. And but then what to what is actually happening at the and the mineralization.

And then the bone healing perspective from from that. Well if you improve circulation you get rid of the edema and you have angiogenesis and you start delivering more oxygen, you start delivering more nutrients into that tissue.

Now, if a tissue is mineral deficient, calcium by itself doesn't heal osteoporosis, right? Calcium has its limits in terms of how much calcium you could deliver.

So you calcium is only one of those things, but delivering increasing circulation to the tissue or reducing edema. All of that is a foundational benefit to the cell now.

So you have first of all, you have to have the stem cells and you can create osteoblasts, you can create new bone, but it's very soft newborn like a callus.

The callus ain't done yet. Right now you have to mineralized that callus. So once you've got the callus going and you start to improve the circulation, then the minerals start to flow into that tissue.

And the, the body then uses that the DNA and all the repair processes in the body begin to use the minerals. Now to solidify the bone. Now then fundamentally this is the going to be the case with essentially any tissue in the body.

And and so then anywhere where you apply magnetic field, you're going to be working on the charge on the cells in that area. And then you're going to be, improving cellular efficiency.

And then and then. Yeah. So then if you were thinking from peptides or thinking from regenerative medicine or thinking from wellness and just getting supplements there, then you're going to be having a benefit depending on on what dose you're using and how you do it.

Absolutely. Go back to the non unions. What they found is that the FDA actually approved magnetic therapy devices for nonunion, specifically for that purpose over 25 years ago.

And it's a very low testing magnetic hill. And they found that people using that intensity magnetic field over a nonunion had to use it for about 9 hours to 10 hours a day and a six months to a year.

The fractures healed. Now, the healing process hasn't finished. But now, like we do with medicine, we put a cast on it. 12 weeks later, the Catholic callus is good enough to take the cast off, and then you cross your fingers that don't do something stupid.

The refractory I have a friend of mine who has who, had a nonunion type of injury on his leg, and then I looked at it and, he doesn't have pain. And it was the one time in my life that I was just dumbfounded because that it was.

It's it was so deformed and just gnarly looking in terms of, of the, the the how poorly the bone had been, how significantly it been damaged and, from a failed surgery.

And, so then I said, well, what did you do? And so then he had he started he had one of those real low intensity PMF things that he would put on, and he had to put it on for, like four hours a day.

For Which is still not enough. But he said he did it for about 6 or 8 months and then the pain went away. And he doesn't have any pain now which is crazy right.

Well and that research of the study done recently on about 170 people that nonunion the tibia tib fib fractures or scaphoid fractures. Most common fact that's what has this person.

And they found that they were recommended to do ten hours a day. So they evaluated that to see how many hours a day they actually did their treatments.

And they found that if you didn't do nine hours a day, if you did nine hours or more a day, you would heal about, three quarters of the time as fast. So in other words, three quarters faster than the people who only did three hours a day.

So there was a clear trend for how much time he had actually used for magnetic therapy. But that was a very low density system. So can you get faster healing with higher intensity?

Probably there may be a trade off at some point where the return doesn't get any better by doing more of a higher intensity, but it's probably going to still be faster than using a low intensity magnetic system that just doesn't have the power deeper into the tissues, that what would be talked me through then some of it because there would be some home type of units that would be low intensity and then obviously, like in doctors offices, we're using the higher intensity ones.

What what's your what's what, what's your perspective on on how do they work and how do you like, I started out working with PMS, because depending on what was available in the market, what I could buy, and I started working with very low intensity magnetic systems.

Most people don't even know what the intensity of the magnetic system, the peak magnetic field, is of their magnetic system. You got to find that out.

But if it's less than 15 gauss, we talked about the inflammation and the adenosine receptor. So if it's less than 15 gauss, you barely getting any action beyond the superficial layers of the skin.

So your synapse stimulated the superficial circulation in the skin and you're stimulating the acupuncture points are the meridians, which are all very superficial.

They tend to be. So you're getting at least an acupuncture benefit, but you're not getting as good at direct cellular injury healing. You know, benefits. And so you have to titrate calibrate the magnetic field.

So the home based systems for depending on the problem you have, you have to determine the the system that you need for your particular problem. And a low intensity home based system is going to make you feel better, but it's not going to do much healing.

And I gave up on those low intensity home based systems early on because, again, seeing a lot of patients, they weren't responding adequately. They felt better, but they weren't responding.

I was not seeing fractures healing, I wasn't seeing wounds healing faster and so on.

Home Devices, Intensity, and Fracture Recovery

And so then what, what what intensity do you need for a fracture healing? Depends on where. So as it turns out, obviously the nonunion factors are healing faster with 15 Gauss actually achieved about 60 Gauss magnetic fields.

So they're going to heal faster. But if you have a $4,000 magnetic field four inches into the body, it's now 15 gauss. You start with 4054in into the body.

It's dropped off in intensity to 15,000. That's a natural phenomenon. A physics phenomenon or anything that produces a radiated field is a non-ionizing radiation, but it's still a radiated field.

So, what I if I have a book Supercharge Your Health with PMF therapy, I have two books. Supercharge Your Health with PMF therapy is the most recent one, and then the first one was Power Tools for health.

So for the scientists and those that want, the reference is the power tools for health book is the better one. But if you want if you want to know what magnetic system you need for your problem, it's the most appropriate for your problem.

Then the Supercharge Your Health book has protocols, has tables in it that allows you to sort of figure out for yourself what what's best for you. If I said, if and that it's been my experience to that from an the non non union would be number one.

What's your number two condition that you've had success with over the long term, over the years with the EMF. Anything that needs healing, anything that needs healing, surgical wounds will heal in half the time, even a normal fracture.

I'll give you an anecdote KSP. My wife broke her right little toe immediately hit it on a lot of furniture. Swelling immediately bruising immediately.

Pain on motion, you know. And of course, classic signs. She's a nurse, but she refused to have an X-ray, so I'm guessing that it was really a fracture, yet not a dislocation or, something minor.

But she started treatment with a low intensity magnetic system, a 200 Gauss magnetic system, 200 as she walk constantly over the fracture site. So I put her in a platform shoe body, take the toe.

No elevation. Although she was doing the magnetic therapy, so she didn't. She wasn't compliant with elevation and ice. Next morning. So basically about 12 hours later, she no swelling, no bruising, no pain.

All the swelling was gone. Continued in the platform. She continued the magnetic field therapy. The following morning, she walked a mile and ten inches, continued for another 24 hours.

She walked three miles in tennis shoes. And that was the end of the story. How, how long was each one of the sessions continuous? She it was a battery operated, little battery operated machine that you bore and or shoot or in the brace around it.

Okay. That was continuous. So then this is the peptide summit. So then all cases like that fairly regularly. And then interestingly, if like this was the, the pinky, then one thing that we'll do is we'll start to inject peptide subcutaneously around where, where the fracture fracture is.

Right. Yeah. And so then you know some of the fragments, the thymus and beta for thymus and beta for BPC 157. Those are kind of traditional things that have been used quite a bit.

And we will see a similar, thing of swelling going down and, and rapidly healing. But then that was kind of one of the things that I wanted to talk to you about, because I think that that is an area where you can supercharge, I like the, the title, Supercharge Your Health.

So then maybe we'll supercharge peptides by running electromagnetic field through an area where you just injected peptides, for example. Well, fortunately, a fracture is a short term process.

It's an acute problem. Unless you got somebody who's immune compromised and is already horribly depleted nutritionally and and so on, then you have a lot of work to do to get those tissues beefed up.

But in that circumstance, otherwise, yes, peanut therapy combined with anything else, including oxygen therapy and ozone therapy, including ultrasound, infrared, all of these things are highly interactive because they're each one is somewhat different in its mechanisms and the benefits that it gets.

And in the case of your your injury, if somebody were home with a PMF device and they was able to use it continually, they they'd heal even faster than they would just with their magnetic therapy.

We know that for arthritis that they hit, arthritis of the knee, ozone combined with arthritis in the knee. We'll hear about half the time as well. Okay.

Well, what's the synergy between ozone and the magnetic field? Primarily because ozone is delivering oxygen to the tissue. So ozone systemically is not as good as ozone.

Local. Right. And so if you injected those peptides systemically, you wouldn't necessarily get the same value or the same benefit as doing it locally.

Well, same thing with magnetic field therapy. If I'm stimulating the right, the right foot for a problem in the hand, it's going to help somewhat because we know, for example, if I put a magnet in somebody's palm, I could see the palm turned red right away.

I can look at the other palm, and it's redder than it would have been. But it's not as red as the one where the magnet is. So we have all these systemic reflex changes.

A part of the circulation improvement, on the other hand, may also been to the acupuncture points. I mean, stimulated in the hand. Right? I remember when the that was like one of the initial ideas that I really liked and Chinese medicine, which and, you know, we learned it in the Helms UCLA course.

But then when I studied acupuncture in China, they talked about this too, which is, is that there's always a local treatment, an energetic treatment and a systemic treatment.

So we're always working kind of at all of those levels. And we as integrative physicians do that all the time. You don't just treat the problem, you treat the person. Yeah, yeah.

And ozone also is can be kind of interesting because ozone is an oxidative therapy that donates and, electron. And so then your, your ozone will I think help the electrical sort of magnet.

The electrical charge in an area. And so then I would think that and then and but but ozone is 99% oxygen, right. Its absorption by itself is beneficial. Right.

And if you have an injury, you also you have arthritis or whatever, then you you don't have adequate circulation. Do you recommend doing the, the magnetic field, before or after the ozone injection or both.

Yes. So what happens, the way I think about it is that if I do it before, then I'm already preparing the tissue. The magnetic field therapy increases heat stress.

Proteins. As well, you increase heat stress proteins, then the stress tissue is then going to be able to heal better, faster. Not to mention the circulation.

Because, you know, you can't assume that that tissue, even though it looks like it's normal circulation, it doesn't necessarily. And when you have a lot of arthritis because of the edema, you don't have good circulation a priori.

Right? Right now it micro circulation may be it may not be macro circulation, but you're not getting all the nutrients you need to that tissue at again close to the cellular level, at the capillary level or lower.

Right. And so then that that goes into how you know, and when I think about and treating an area I'm always thinking about treating the nerve and the arteries and the lymphatics that you're either, and veins that are either going to or draining a tissue bad.

And so then for example, we'll do nerve hydro dissection sometimes to treat a nerve that goes to a knee. Sometimes we'll do a systemic treatment that is going to affect biochemistry overall.

But then obviously a lot of times then we're trying to go right into that, right into the joint or into a nerve there. But

anything that can improve the overall health and blood flow is going to is going to be helpful.

And it kind of resets cellular homeostasis that initial all of that edema. Is this a result of kind of a mini cytokine storm in that area. And that is has the intention or the reason it's there is to increase blood flow.

But sometimes inflammation can lead to a state where it gets a little dysfunctional. It gets stuck in an inflammatory state that doesn't get what doesn't turn itself off. What does it become?

This formation. Yeah. Which is, which is interesting. The, outside, let me go to that part for a second. I'm sorry to interrupt you. Oh, yeah. So magnetic field therapy will help along the entire spectrum.

So magnetic field therapy not only brings amplify the inflammation you need for acute healing. So wounds, as I said, will heal in half the time. Acute wounds, post-surgical wound will heal, half the time.

Synergy with Peptides and Ozone

So you improve all the factors that go into improving that wound or healing that one, including stem cells, including DNA, including mitochondrial function, including ATP.

All of that gets turned on. But then then as the magnetic therapy continues, the body begins to move to the next phase automatically. And the PMS then stimulates apoptosis of chronic inflammatory cells.

So they don't really help with the acute inflammatory process, but then they kick in apoptosis for the stuff that's not supposed to be there anymore. Right.

Yeah. That's a that's a that is an important point then to keep in mind because then that's good. Be there because you know that they're when they're in that if cells are in kind of that zombie state then they, they do bad things.

And so they need to be either converted out of the zombie state or they need to go right. Well, magnetic fields do increase step up doses in healthy cells that are compromised, that again, that have crossed the line of no return.

So so then it's kind of, it's a good conversation. Because, yeah, it's always kind of like, well, how did you get here for me? I was an anesthesiologist.

And so then a lot of, all of my early cases that I would pick up would be people, and I would, you know, it's kind of interesting. I would I was as a, as a, anesthesiologist, somebody would have, surgery and then they would, they would have, there would have a problem with their scar.

Right. And it wouldn't heal. And so then because I was doing this, I, they would send those people to see me. And so then I had done a little bit of work with acupuncture, which was, I would say minimally horrible.

But then when I started doing, the and this is maybe one of the greatest moments of my life personally, because when you're a young doctor and I started doing the, electrical acupuncture where you would put basically needles all the way around a scar and then hook up this daisy chain, right.

And then you would have somebody with kind of a red, inflamed, painful scar, hypertrophic, and and then next thing you know, that scars and I, I did it for a couple good friends of mine and then just like miraculously got better and that was kind of like, a sea change moment for me when I realized, oh, this definitely 100% works.

And I kind of related it to my own kind of experience of, of doing anesthesia. And that really was almost the beginning of my practice, you know, in terms of having like a great success with something.

And I right around that time, also knew people who were using PMF and achieving similar goals. And so then it kind of hit me as as like a it was a it was a really an amazing moment.

Can I share an amazing moment with you? I love one, three year old girl. I cut her thumb off in a doorjamb, below the level of a neighbor just beyond the joint.

Complete devotion. The father call me the plastic surgeon. My. To clean up the wound. Graft at a graft, you know, grafted. I said no, hold off. I heard where some where my training in the UK.

If a kid before age 11 has that happen beyond the joint? They can regrow. But I'd never seen it. Nobody else around me ever talked about that. You know, that's not the first reaction that a surgeon has.

I said well and we know that a surgeon did that, that child would have an abnormal sound for the rest of her life. It'll be deformed if you operate on.

Yeah. Yeah. Exactly. So, so you got nothing to lose. Basically I use the same magnet that I did for my wife's toe one and a half to three hours a day, and I have pictures. Serial pictures.

Not that many serial picture, but six year old pictures. Put put to put it back on again. You can see the suture marks black as you'd imagine. 12 weeks later she growing her now.

That's amazing. When was that? 76. 78. Really? And she ended up being totally fine. Yeah, that a crazy it's a it's awesome to go through it. Yeah. Wait for young doctors out there.

You get you get a moment, you know, you get a moment like that. And then that kind of I remember, I remember in the Helms course, I was like, they said, go out and our angels are going to be supporting you.

Yeah. The next year. I remember there's a whole bunch of things that were, you know, and, and that gave me the confidence to go out there and kind of look for more amazing cases, you know, and you're not going to see them in medicine.

We just don't see that in medicine. But but more and more that where there's, where there's such a, emerging overlap between, you know, what these different, these different fields and they're all coming together.

And that's why I kind of was excited to have you on, because the synergy between device, device centric things, which is nice because that's, I think, lower cost is more a simple thing for people to do.

It's not product intensive. And, and then and then when that can be supportive to biochemistry and biology, then that that's that's, exciting. If I was to say next, in, in your career, maybe either like of a similar genre of sort of a life changing or career trajectory changing kind of diagnosis or, or a set of things that you, you see, you've seen people really experienced benefit from PMF.

What would it be? You know, that's such a hard thing to say because it really depends on the problem that you're dealing with. I'll give you another story.

76 year old nurse who had arrhythmias and she had cardioversion. Cardioversion at 24 times. And the cardiologist said, don't bother coming to the e. R anymore.

So he contacted me. We got her on the right magnetic system. And this was three years ago. She hasn't been back to the e. R. Once. She hasn't needed to. She hasn't felt like she needed to.

So it's not healing. It's not necessarily curing her heart, but it's making it functional enough that she is able to, you know, live her life. What kind of system did you give her?

It was a higher intensity system. I believe it was called a PA meds. Multi flash. How how what kind of time? For treatment would that be? In her case, I, I, she had to decide for herself how much time she needed because what happens is what people treat and they start backing off issues often come back if they're not fixed.

So she would have to decide. I told her that a minimum of half an hour, a three times a day. Okay. How long did it take to before she started to see a benefit?

She started feeling better and generally more energy and able to do a lot more chores around the house. Within about 3 to 4 weeks. And some people, you see that happening very, very rapidly.

Within a day or two days, they already feel a significant jump in, functionality. And energy. That so then that's that's interesting idea to think about just because there's the what happens is there's an electrical conduction pathway.

It just spontaneously creates a B, and the top part of the heart goes down to kind of a junction in between the top and the lower part of the heart. And then the electrical wave goes through.

You know, we we've certainly seen more electrical problems. And so one thing that can happen over time is people can go into an irregular heartbeat, something like atrial fibrillation or, you know, other, other aberrant electrical, conduction.

Yeah. But, we've also seen this quite a bit in the long Covid population, right. And sometimes that's in patients who have had myocarditis and sometimes in patients who didn't have myocarditis, but, but just started to have a lot more ectopic electrical activity.

Have you, have you, have you, have you had patients with similar problems? So there was a study done in dogs where they had they had the dogs under surgery, had the chest open, the heart exposed.

They stimulated the heart electrically to cause an arrhythmia. And then they treated the dog with magnetic field therapy and then redid the electrical stimulation.

Nothing happened. So the magnetic field therapy depolarize those excitable nerves. They're already inflamed and excitable, so it causes them to sort of chill down or relax.

And again, if you decrease inflammation, then nerve conduction is better. And and then a atropine or a epinephrine or whatever you're going to throw at the heart doesn't cause it to fire off as much.

Now, the goal long term is not only to help to decrease that from happening, but to try to repair the heart and AF atrial fibrillation. It's now been pretty well established that fibrosis and inflammation are the root causes of the development of AF.

AFib, and so the long term perspective would be long term treatment of the heart to try to reduce and reverse the fibrosis.

Heart Rhythm, Brain Injury, and Inflammation

Talk about the wound stuff that you were describing. It's hard to do acupuncture on the heart where the wound. But you can with my gut feel therapy because it's it's safe enough.

It's safe in virtually any tissue. Right. And so then that one's kind of interesting because if you imagine that the heart, there's a magnetic field around the heart, the expression of that magnetic field around the heart would be the heart meridian.

Right. And so then we would used to have treated, try and treat that or even to try to treat that heart meridian with electricity. But then even then, that's not going to begin to do the type of therapy that you could do by actually treating the actual directly, the muscle cells of the heart, directly correct the cells of those heart.

And, and I do think that that's going to be a very interesting direction for people to think about because, because from from the heart perspective, you know, what?

It's been a challenge. And I think I agree with that idea of excitability, of excitability, of those cells. And then if you can begin to regulate that, then that's going to be an interesting idea.

And, you know, from the heart there's and the peptide front, we're talking about peptides. There's a bio regulator, cardiogenic for the heart. And then there's a bio regulator for blood vessels.

And then traditionally doctor Kavin son, who's kind of one of the, I would say top peptide gurus in the world, who really fundamentally developed the Russian bio regulator peptides.

And he would always give a blood vessel, bio regulator, with, with whatever other one you're doing. So you would do for example, heart and blood vessel.

And then a lot of times for people with heart problems, they will sometimes benefit from neuro neurological bio regulators. I think the neurological by regulators can have a benefit not just in and neurologically, but also to peripheral nerves and then probably autonomic nervous system basically dynamic nerves.

Exactly. Which it and and so then those are cordage and penile on and capital on. And so then together the five of those we call them the Fab Five, kind of the heart, heart brain connection.

And so then, that would be one idea that you can do things like add BPC, BPC will stimulate angiogenesis to some extent. And so then there's going to be other peptide.

So they can kind of come into play. But these are all fundamentally systemic things that are going into the ocean of our our biochemistry. Yeah. Yeah.

But then the idea that you could dial in some, magnetic field therapy to locally targeted in parallel to that is, is is interesting. Have you, you know, one thing I don't know, we haven't talked about this for the AFib.

One population that I see that gets a feeling is other endurance athletes. Do you have any thoughts on that? Have you ever noticed that? I've heard of that.

I my guess is that. They're on adrenaline drive. And that kind of constant pressure on the heart or any other organ. And the heart is, like, incredibly autonomic dependent.

You're constantly pushing it. But then also endurance athletes are chewing up protein. Right. They're breaking down protein. A lot of protein. Are they keeping in balance with their loss.

Are they're rebuilding the protein that they're losing. So that's always a that's always an issue for us isn't it. Do you have the right balance. And how do you figure out you have the right balance.

You wait till you have an imbalance and they say oh I have an imbalance. But by the time you get there can you reverse it now? Do you have fibrosis? Okay. No.

Then we're talking about the heart. And I was talking about some the brain PMF in the brain. What are your thoughts? I did a study, actually, concussion using a lower testing magnetic system where people were doing so.

We had objective measures, River me concussion scale. And we had a measure called brain gauge, which measures, neuro sensory functioning of the of the brain.

And we treated them two hours a day, basically each side of the brain for an hour here and an hour here to, to, pads. They did two hours a day. We monitor them for three months.

They all got better. Everything improved, all their scales improved, that they were off. The scales that were off improved within two weeks, they maintained that benefit.

Then at the end of three months, we had them stop for a month and retested them. They all lost about 50% of their benefit. Their gain. So my conclusion, what I was hoping to be able to show that my that I feel therapy at the level that we chose, the the protocol that we had, would be able to repair tissue.

So I can't I'm not comfortable saying that we repair tissue, but we did improve function. So maybe we improve function well enough that they only lost half of their gain after a month while we actually did some healing.

What was the, what was the, like what was the dose that you used? It was, 100 goes to each side of each temple. So it was not my optimal that. Now there's a lot of research that shows the high intensity magnetic field to the brain, does a better job with concussion.

Okay, there's there's, there's a interesting Sean Berman. And is that Doctor Berman, at Saul Surgical Network are some friends of ours. And they did a very interesting animal model for traumatic brain injury, where they took mice and expose them to an acoustic shock.

Okay. And and then, they did that, and then they did a whole bunch of tests of those, and then they took another group and expressed to the same shock.

And then they gave them stem cells. Right. And, and, this is, Mark Berman and, and Sean and, I'm not sure there was, I think, a couple other authors on this, but so then what they did is then they took those animals, and then they, they, sacrificed them and then looked at the brain.

Brains. Right. And then basically you can see where and the the animals that were not treated with stem cells with. Yeah, exactly. They just got the shock wave.

And then you look and you see a hematoma right there. Okay. In the brain, you can see it right in the cortex. And then for the animals that got treated and they got treated with an IV of stem cells that, that went into, they basically put an IV into the tail vein, and then they gave them stem cells.

And then basically the ones that don't get treated have a hard time rolling over and doing the things that they do. The ones that do get treated basically start to move around and start to act like almost like nothing had happened.

And then when they sectioned, the ones that were not treated, basically they have this hematoma and then the ones that were treated for the most part don't have hematomas, or one of them had one.

I reviewed the slides, had a tiny, tiny area compared to the the untreated ones. And so then this goes back to our conversation that I think is kind of beginning to make sense.

You're treating a vascular bat and so you're treating that vascular bed where there's a hematoma, in the brain. That's particularly challenging because it's under pressure.

And so then that hematoma is going to recover more slowly then a hematoma in your leg, and then you can do other side in the brain. It doesn't have the same blood supply as a as a muscle does, which can more easily and readily remove the volume of blood that's there.

Right. And also with the like with the brain, with those hematomas, those injuries, you're not only reducing it. In fact, there was a study as well that where they dropped the weight onto the brains of mice and then, then sacrifice them and the measured, cytokines in their CSF.

And they all had significant cytokines after two injured back just like that back. They immediately had cytokine production so that the injury caused the cytokines and then the cytokines themselves that you can imagine then caused their own, you know, further damage, especially if you don't clean it up rapidly.

We know that you have to increase stem cells. In fact, there was a NASA study on neural stem cells using magnetic field therapy, and they were stimulating these neural stem cells, 24 seven they found that the right at the

right intensity, at the right frequency, plus the right wavelength waveform, and they had a 400% increase in stem cells, and over 140 growth factors were turned off.

Right. And that and that's because every tissue bad has a whole bunch of stem cells in it. Correct. Basically waiting to be activated. And so then if we get head back, then the inflammation is going to cause an inflammatory response that's going to lead to healing.

And part of that healing is going to be stem cells that migrate in. But part of it is going to be stem cells that happen to be there. They just get turned on and activated right start to get activated.

And to then whether we're dealing in the brain or whether we're doing in the heart, we're basically we're dealing with our vascular beds, nerves, arteries, veins, fascia, inflammation and then basically working our way through turning that on.

And so then it makes and from for me what I have found is and in simple problems they're pretty simple effects. And there's a hundred different things that approach us exactly once each approach does its sort of thing.

That the better the better thing would be to have ten different approaches to address the problem, because then you're going to be you're going to be sure to cover most of your bases.

Right. And but for a simple problem, you might only need 1 or 2. That's right. But for these acute especially acute especially acute but for these big problems, then you begin to say okay they need multimodal therapy.

And and and so then that that's that would be how we think about almost everything that's peeling the layers of an onion. Right. You have one effect at the beginning.

And then that gets better. Then the next effect the low it shows up that that needs to be regulated as well. And so on. So you're you're working at multiple layers.

We were talking a little bit about you know, some of the autoimmune conditions like, rheumatoid arthritis. Have you had the chance to treat many people with, with arthritis?

What we treat, regular arthritis, osteoarthritis on a regular basis and very, very rapidly, you get significant increases in reductions of pain. One of the first magnetic field effects is anti-nausea ception.

You get decreased pain just from the perception of pain itself. And as that as the healing process. All these physiologic processes start moving through the tissue.

Then you start to see progressive improvements and retention of of benefit with time. So arthritic patients have increased mobility very quickly, have decreased pain very quickly, have decreased swelling very quickly.

Rheumatoid are more complicated because it depends on the level of severity. So how much inflammation does rheumatoid have. So if they have a if they have a CRP of 15 or a set rate of 120, you got a lot more inflammation that you got to quiet down.

And that takes more time. But generally speaking, arthritis responds very well. And if you do a whole body magnetic field therapy for rheumatoid arthritis, then what happens is that you're preventing your decreasing inflammation in the body.

In general.

Arthritis, Cancer Prevention, and Lifelong Wellness

And if you have ten areas in the body that are inflamed and you got a rheumatoid, joint MCP joint, say thumb, well, how much of the body's energy is going to dealing with the thumb and how much is going to dealing with all the

other areas of inflammation?

Right. So then if you're dealing with a whole body, then you can also focus on the local area too. But you have to deal with the whole body. I say the same thing about cancer.

So breast cancer for example. 40 to 60% of women at the initial diagnosis of breast cancer already have breast cancer stem cells in their bones, 40 to 60%.

So what do you do with that? How do they get activated? We can go through all the different mechanisms of how stem cells, cancer stem cells get activated.

What are the key factors clearly is inflammation. So where do you treat you treat the whole body. You can't be treating just the femur or just the legs where the women get stem, where women with breast cancer get fractures, spinal long bones, ribs.

They're not the places you normally expect. But that what that means then is you don't know where it's going to happen. And as a result, what you need to do is do a Hawaii.

And I'm sure that I'm sure that, peptides also could be very helpful in that setting too. But now you're really talking about lifetime. So I don't I don't like the concept of cancer survivorship.

I think once you have cancer you're at risk for the rest of your life. Right. So that means you need to be in a preventive maintenance program really for the rest of your life.

And we hear this all the time. People change their diet and change their behavior, change all sorts of things. And they've never felt better in their lives.

And the risk of the cancer coming back decreases dramatically. They're at a, at a high level. I would say that, you know, you think about the the major killers, your vascular and infectious inflammation, and then that's basically heart attack and stroke and you cerebrovascular disease and all of those things.

And then what is the antidote to that is sort of living a super healthy lifestyle. That's a non inflammatory sort of lifestyle. And that's your metabolism. Yeah.

And so there's a metabolic there's like a metabolic conversation. There's a sort of a resetting autoimmunity kind of decreasing antigen load and kind of resetting immune system that kind of overlaps with, the infectious stuff, because the infectious stuff is such a trigger for a lot of autoimmunity.

And so we're thinking about, you know, peptides as a way to optimize and balance metabolic, immune, and autoimmunity. And then that would be like, let's say a big segment.

And then on that whole cancer thing, you know, developing a strategy of living that, you're not doing things that are carcinogenic and adding in things that are somehow anti-cancer, you know, or cancer anti-inflammatory as well.

Yeah. And then having that as a lifelong sort of, journey strategy, it has to be a journey has to be a lifelong journey. Lifelong. Yes, a lifelong strategy. Yeah.

Well, amazing. Do you have any final thoughts you want to share with people? Where can we find you? So that's another that's another question for people who want a consultation.

And they want to combine whatever other therapies, including peptides, with their magnetic therapy because, how often can we do the peptide therapy? How am I how often are willing people willing to come in to get their peptide injections.

So that's always a that's always an issue. So I consider magnetic field therapy to be a home therapy. It can be used

in an office setting clearly to augment and help what's happening in the office.

But with the cancer you can't you know, you have to keep doing it. Osteoporosis. You have to keep doing it for the rest of your life to varying degrees.

And no matter what you do, if you're treating a joint or arthritis in your hand or your rheumatoid arthritis, you're getting all the other benefits of magnetic therapy through the rest of the body.

So it's still anti-aging no matter what you do it, especially if you have whole body therapy. So they can reach me to Doctor Falcon for a consultation.

Now, I, I don't really appreciate consultations from people who are not willing to spend more than $25 for their health. I don't imagine you see those kinds of people either.

Right. And we're talking about serious magnetic field therapy. You're talking maybe 4000, $6,000 or more for a magnetic system. So you're not willing to listen to that as an option for you.

Now, would you consider that there is no point having the consultation because I can't help you that. So that podcast and on that homepage there's an area that says consultation.

The other, the other option is the books that I mentioned. Power Tools for health is more of the science and Supercharge Health for PMS therapy. So those are the two sort of best places for resources.

And that doctor podcast has a lot of information on it. It's a library all by itself. Okay. Now then I'll, I'll take that. But then interestingly, one of my philosophies and I got this and Covid because when, you know, I, I'm an, I'm an injection doctor and so I use my ultrasound and I inject around every nerve in the body or joint in the body.

And so then what happened was, all of a sudden I started getting phone calls. My country is shut down because of Covid, and so I can't even come see you.

I'm honest. And I people would call me and they'd say, I'm going to see you in 2022 or 2023 because the whole world got shut down. Right? And those people are literally calling back like, oh yeah, hey, remember I talked to you two years ago and we're coming out that.

But the interesting thing is, is we started teaching people all over the world how to do peptide injections themselves, themselves. Right. And so then one thing you could do is just inject in your abdomen or over your gluteal area to have a systemic effect.

And so then that's going into effect. All of biology. And then you could do a local treatment. But then a lot of times what happens is people can pinch some subcutaneous tissue and then inject a little peptide in there.

And then we teach people how to do that. Now then notice that was just in some subcutaneous tissue by my wrist. But then what I could do afterwards is do a PMF treatment right there locally.

Yeah. And then locally amplified locally, but also amplify the benefits systemically. Right. And so then we'll use PMF here in the office, before and after treatments.

That's what I would recommend. But but then I also have a lot of people who will use, PMF to activate, when they do injections at home. So they'll, they'll have a system at home.

And so then they'll do a treatment and then, and then they'll run a magnetic field through. And I have noticed that, that that is kind of a way to supercharge, to use your terminology, peptide injection, particularly for things like joints where we're injecting locally.

So if we're injecting BPC one, five, seven or maybe one of the fragments of thymus and beta four or K, some of the

things that are good for pain relief, then.

Well, we'll do that PMF there and then I, I have noticed that that is a great one two combination, but I think that's great, right? I totally would agree and support that.

And then the only other thing about home treatment, again, is that you're getting all the other benefits PMS. So you kind of know that you don't have to second guess what.

You're what it's going to do for you. And it seems to target the body, seems to target where it needs to help. Well, I'm, I you're just seem like a wonderful human being and a wonderful doctor.

And that's what everybody says about you. And, so it's just totally a delight to talk to you. And, thank you. I'm grateful for what you're doing for the world because, this is, important and, profound therapy.

So, thanks to the work that you do. Well. And thanks for the work. You, too. I've learned a lot about peptides. I left practice, so I've not. I haven't had a chance to use peptides in my in my practice.

So now my focus is almost entirely on PML therapy. There's enough work to do there, too, right? Well, that's I think there's, there's, an enormous amount of work.

And then as we bring these, these modalities together and kind of get synergistic with them, I think that, the it's going to it's going to make the next, the next 20 years a really exciting time in medicine.

I hope I'm around a little bit here. I hope we both are. Well, thanks. And, totally, have a fantastic week. And thanks for being here. Thank you. Matt, appreciate you.