Introduction to Dr. Pollack and PEMF Therapy

Welcome back to the Fasting and Longevity Summit. I'm your host, Doctor David Jokers, and today I have the honor of interviewing Doctor William Pollack.

He is the foremost authority on the use of pulsed electromagnetic field therapy in North America. And we're going to talk all about how preamps are pulsed, pulsed electromagnetic frequencies, how they impact inflammation and longevity in your body.

And so, William Pollack, he is a holistic doctor near Baltimore, Maryland. He was trained at Johns Hopkins and University of Maryland in acupuncture, homeopathy, hypnosis, energy medicine, nutrition and body work.

And again, he's the foremost authority on the use of EMF therapy in North America. And he's worked with magnetic field therapies for 30 years and establish an authoritative website.

It's Doctor Pollack, PA luck.com, and he's the author of a comprehensive book on healing with magnetic fields called Power Tools for health. This book describes what magnetic fields are over 25 actions of magnetic fields in the body, how they work for over 50 health conditions, how to get a PMF device for yourself, and how to use it.

And this book is supported by over 500 scientific references and is the most authoritative yet readable book on the topic available to date. You guys are going to really enjoy this again.

Check out Doctor pawlik.com. And without further ado, let's go to the interview. Well Bill, always great to connect. And of course you know this topic.

Pulse, electromagnetic frequencies. It's, it's a little bit of an esoteric topic because it's not something you can like that, that the average individuals visibly seeing, but it has an incredible impact on our overall health, our overall cellular health, and in particular, our inflammatory levels.

And so I want to go into this what are RPE maps? And of course, you know, the elephant in the room is pretty much all our listeners have heard of emfs electromagnetic frequencies.

And we've heard of those in a negative, for, for negative reasons. And so let's talk about perhaps what they are and the difference between them and Emfs.

All right. So, point of education, is that people often do this, do what you did, which is to say frequencies. But it's not just about frequencies. So, an MRI, for example, has two components and one of the components is, radio frequency fields.

And those is magnetic fields that are, vibrating at a very high frequency. And there's another field in an MRI. There's a static magnetic field. So in other words, the magnetic fields are just there.

And the same thing with magnets like fridge magnets or horseshoe magnets or whatever, those are static magnetic fields. So that magnetic fields may have frequencies, but they may not have frequencies.

So people that for some reason have been educated to think in terms of frequencies.

EMFs vs. Pulsed Magnetic Fields

Unfortunately, they've been educated to think in terms of frequencies, primarily by people who, don't have anything else or cell. Sure. Yeah. Right now I understand the frequencies.

So the concept of frequencies, because everything is resonant. But you know what's resonant? It's the electromagnetic field. That's right. You say everything's resonant. What does that mean to the average individual? I don't understand what that means.

Okay, so magnesium, has a resonance. The the molecules of magnesium are have electrons and protons and so on around them. And they're vibrating. They're moving at a certain frequency.

That's the resonance. And so what happens if you have that resonance of magnesium and you have the resonance of say calcium. They're close in terms of resonance.

So they're going to be able to dance together. And if they're close enough and the electromagnetic forces allow it, they can dock with each other. Yeah. Right.

So calcium and chloride will be calcium chloride. Sodium chloride will be salt. Sodium chloride. Yeah. That happens because of the resonance. And that happens because of the magnetic attractions right between them.

Yeah. Not everything ain't nothing in the universe. It's not electromagnetic. It's actually the second force of the universe. The strongest force is the strong force.

Then there's the weak force. Then the second force in the universe is electromagnetic. And the fourth force of the universe is gravity. Okay? Yeah. The biggest force of the universe, the biggest that encompasses the entire universe is electromagnetic.

It's more common than gravity. But, yeah, actually. And so we, we nothing works in our bodies without an electromagnetic exchange. And that's an electromagnetic field which may or as I said may or may not be frequency may or may not be resonant.

So that's that's really so that aspect of it now emfs electromagnetic fields. You know, so that's what EMF stands for I actually call them environmental magnetic fields.

Right. So emfs are basically anything that's electromagnetic, but most of the EMF that we have concerns about are broadcast. They're what I call open loop and broadcast in the environment.

They just keep on going right. They, they go on forever essentially to infinity a very, very, very weak levels. Magnetic fields, pulsed electromagnetic fields are magnetic fields that are produced by current flowing through a wire.

There's a box, a control unit that produces the current, and it sends that current out into the into a wire, and that current is pulsing in that wire.

What are the laws of physics? Is that where you have electrical currents, you have magnetic fields. At the same time. So the electric field pulses at the same time is producing a magnetic field that passes out in a way, but it's wrapped into the wire.

So it's controlled by the electrical current, which means it's not open loop. It doesn't get broadcast into the environment. It's it's basically going back and forth as the current flows through that wire.

So it's a contained magnetic field and they're very, very low frequencies usually. So that was they're pulsating at a very low rate. Whereas the environmental magnetic fields typically are high frequency.

They're microwaves. So that's cell phone towers, cell phone signals Wi-Fi. All of this stuff tends to be high frequency. FM radio, Am radio. Right. They're high frequency most, most of the time.

So that's a different sort of animal, if you will. Relative to the body than pmfs. So that's contained and emfs are not contained. Yeah, that's a good, good explanation.

And also how about the emfs in nature. Like for example, if you go out in the forest, there's, there's EMF is coming from the trees. Is that high frequency low frequency.

They tend to be low frequencies. Yeah. High frequency, very high frequencies. They have high frequencies as well. Our human body produces high frequencies.

Most of the and those high frequencies are related to color. Very often. And light. Right. We we broadcast our bodies broadcast infrared. Our bodies broadcast far infrared.

But most of the, very high frequencies that our bodies are broadcasting are not actually broadcast by the body. They're going through the body. Gotcha.

So when we're measuring what's coming out of the body, we're actually measuring a huge amount of the time. We're actually measuring what's gone through the body.

Wow. So we actually we release infrared and far and buried as well is where. We transmit it through us. That gamma rays pass through us, X rays pass through us.

All these other frequencies in the universe basically just pass right on through us. Okay? Now microwaves, unfortunately, the the the faster the frequency, the shorter the wavelength and the shorter the wavelength, the more is absorbed by the body.

Okay. So that's why x rays or radiation therapy is very high frequency, but it's absorbed by the body but it's ionizing. That means that it can destroy tissue.

And there's heating. And we use frequencies that are, that are absorbed by the body that do heating in the body. And we use them for therapeutic purposes, but to a limited extent, because you can burn the tissue.

And actually in medicine we use radiofrequency to burn tissues. So if you have a nerve that's being pressed on by a disc or by a growth of some kind, and that nerve is causing you pain, but you can't get rid of the growth that's causing the pressure on the nerve.

So what do you do? You kill the nerve. Okay. Right. So you can't solve the problem but you can at least treat the pain. Yeah. And that's radiofrequency.

So that's a burning technique and that's used that way on purpose. But most of the time we don't want those high frequency fields because they do heat the body.

Nature, Grounding, and Cellular Resonance

So if you take a cell phone and you put it to your ear and you hold it to your ear while you're having a discussion with somebody, then we take the cell phone away from you.

You'll see typically very, very common. You'll see that the ear is bright red. Well, what you've been doing is you've been cooking your ear. Yeah. Those microwave frequencies. Heating it. Up.

It's heating it up. Yeah. It's superficial. It's not going to necessarily damage you. Now if you have that cell phone to your ear 24 hours a day, then there's a risk that you're going to do some damage in the body.

So most of our exposures are not that that that high or that long. So most of the time that we don't have have a big problem. But ideally you want to decrease those kinds of exposures.

Yeah. What are your thoughts on using cell phones up to the ear and perhaps, you know, a link with brain tumors? You have to have a very high dose over a very long period of time.

You know, one exposure is not going to cause a brain tumor. Sure. Yeah, sure. Right. They have to damage the genetics of the of the tissues of the cells in the brain, and the and the body's going to try to repair that.

And while it's trying to repair it, of course, undoing the damage that's caused. So the key with, with, Wi-Fi and the key with, that kind of EMF exposure is the dose.

Right. And that dose includes the amount of EMF, the intensity of the EMF, and how much of that you accumulate over time. Yeah. So most and I had this discussion yesterday on another call that I did most of the time, for most people, it's not that big a deal.

I say it's not that big a deal. Now if you happen to have hypersensitivity, if you happen to have a really, really hot autoimmune problem going on, your white counts are very high.

Your, sedimentation rates are high, your C-reactive proteins are high, you're hot. And when your body's hot, that may be, very irritating. Already the cells are very sensitized.

And so as a result, adding another burden on top of that sensitized body that makes it much worse. Yeah. That's the only time that I really think that we really, really have to worry.

Now, if you happen to be a lineman working around microwaves, well, you're going to get a lot more exposure. Right. Most of our exposure. So most of us are passing.

Yeah. Right. Right. If you unless you have a router and you're, you're working in a router near a router eight hours a day or 12 hours a day. Yeah. You get a lot of exposure if you have a, a meter, a smart meter next to your office that's transmitting all day long, well, then you're getting a lot of exposure.

It may not be a high exposure, but it's continuous and it's it's over long periods of time. What's what's a good distance? People should. You know, this is probably a lot of people listening that have a router perhaps in their, their home office that they're using or you know, somewhere that's close by what's a good distance that they should keep stay from their router on a technical basis?

I don't have a good answer for that, because if you're, if you're in a library and it's a big building, let's say you're in a, in a dormitory at university and you're 500ft 1000ft away and you're still getting a good Wi-Fi signal.

Then you're getting exposed. You're getting you're getting exposed. Exactly. Yeah. So again, that's going to vary from person to person and problem to problem.

The good thing about pulsed magnetic fields is they offset the added irritation effects from emfs. Yeah. So if you're doing PMF therapy for yourself for any other reasons, you're getting a benefit in terms of offsetting the irritation in the body.

Now you're not neutralizing it. What you're doing is you're you're decreasing the body's reactivity to it. Right? Yep. I actually I totally block the EMF.

Yeah. If it's hitting your body, you're getting that exposure and your body's going to react again. That reactivity may not be a big deal. But cumulatively, over time and especially again, the more toxic you are, the more inflamed you are.

That may be more of a of an issue cumulatively. Yeah, absolutely. Yeah. So pmfs can be a helpful antidote because they're going to help stabilize the cell structure and help improve overall cellular communication.

Cellular health. That's key. Now, our ancestors obviously before this sort of technology was around, you know, they obviously were being exposed to as much of the hazardous emfs on a regular basis that we have in our society today.

But also they were getting, you know, the the beneficial EMF from nature going out barefoot, grass skirts and being around trees, things like that. A lot of things that most humans in today's society and third and first world countries are not doing very much of, yeah, yeah.

And now, obviously we've got this great technology of cell phones and Wi-Fi and 5G and all this stuff that allows us to grab information so quickly, but we also need to harness these emfs and use them therapeutically to help improve our health.

Because these these because these technologies can be hazardous, to, to our overall health. Well, that's a very important point. And I have, had discussions with other people about, grounding, for example.

Yeah. The, the, the planet has currents in it that are flowing in the planet on the Earth itself. They're called telerik currents. And they're all over the planet.

We can't stop them. They're, they're naturally in addition to that, we are exposed to the Earth's magnetic field. The Earth's magnetic field is about half a Gauss point.

Five gauss, just Gauss. And that's important. So in the past, before modern technology, we were basically living on the planet. We were living on the ground, we were sleeping on the ground.

Or as you said, we were walking barefoot or we were walking in sandals and maybe we even hug trees. But if you didn't hug trees, you know, these were around trees and plants all the time that were emitting their own magnetic fields.

So they were balancing to the body to a great extent. However, if you got shot in the chest with an arrow, the value of the benefits from the grounding is not going to be that good, right?

That can be bad helpful. So in general, they help you to balance. But what do people die from before let's say the last hundred years infections. Most veterans are trauma.

Yeah. Exactly. Right. So we were still dying. Yeah. With all. That grounding. Totally. But if you're very sick, grounding is not strong enough. Yeah. So magnetic field therapy doing magnetic field therapy is magnitudes.

Magnitudes of times stronger than that than the Earth's natural magnetic field. Yeah. So if you're relying on grounding to be the the big deal for you in terms of, your health, well, it's going to help, but is that enough.

Yeah. And considering what happens in our environments it's not enough. I don't think. Yeah. Yeah. So let's talk about these pmfs and how we can harness them to help improve the overall cell health.

And I know you know so let's talk about yeah like the basic physiological actions of these pmfs. All right. So pmfs like as I said are generated by current flow through a wire.

So the magnetic field is bouncing out of the body and the body is completely transparent to a magnetic field. Nothing in the body stops or uses up a magnetic field.

Right. It just passes right on through the key. Then it's not the magnetic field passing through, it's not the magnetic field that's important. What's important is how the body reacts to it and what the magnetic field is doing.

How PEMF Supports Cell Repair and Energy

Essentially, as the magnetic field is passing through the ions in the body. So our bodies are electrolytes, super. We say that they're water 86 types of water.

It's not water and it's not even saline. It's electrolytes soup. Because it's so loaded with electrolytes and ions, that magnetic field is interacting with all the ions structures of the body and the charges on the cell membranes.

So that interaction then amps up the body. It creates charge or energy in the body. And then the body basically says, okay, I have more energy. Now, what do I do with it?

It could do a lot. So you can heal wounds in half the time. You can heal fractures in half the time. You can rebalance your body via your meridian system, your acupuncture system, almost immediately.

Every time you're doing magnetic field therapy on the body, you're doing acupuncture without needles, right? I discovered that very early on in my career working with magnetic field therapy.

That's one of the reasons I started doing magnetic therapies to replicate acupuncture. So basically acupuncture, the acupuncture system is a it's a DC current system.

So because it's DC current, what's that current doing in the body. It's flowing. And and what is it doing when it's flowing. It's beginning to balance out the, the the strengths and the weaknesses within the body.

And with acupuncture that's what you're doing. You try to balance out whatever deficits there are, whatever excesses there are, whatever, and insufficiencies there are tries to balance them, a balanced body that is functioning harmoniously and harmonically, to do the best work that it can.

But magnetic therapy amps that up by significant factor. I actually did a study with people with, healthy people and expose them to a magnetic field. Then we did something called GTV, which is currently in photography, and we looked at the field, the electrical field of a person before magnetic therapy and after.

There's almost a 20% increase in the energy of the body after magnetic field therapy, whole body magnetic therapy 20% increase. So the mitochondria just become a lot more efficient with their energy production.

Everything. Yeah. Everything. Oxygenation, stem cells, circulation, ATP production. So there's a list of about 25 different actions of magnetic fields in the body as a reaction to the magnetic field.

Now, how was that? How was that? That was pulsed electromagnetic frequency. Was that like their whole body was exposed? So was was it like I laid on it?

They laid on a pad. On a pad? Yeah. Okay. A whole body magnetic pad. Yeah. Yeah. Exactly. If you exposed part of the body, but not the whole body, that part of the body is going to get a significant amount of benefit from the magnetic field exposure.

And some of that benefit is going to accrue to the rest of the body, because the meridians are flowing through that, that section of the body, and they keep circulating as they keep on going, the circulation in that hand or arm that's exposed to the magnetic field is also going to keep going through the body, and it will then help to condition the rest of the body.

But it's never going to be as strong as the magnetic field applied locally. Right? Right. Because you have devices that are very localized, right, where you're really applying it localized.

I know there's other other devices like mats, like I have a mat here at home that I use before I go to bed. I have an office chair. So there's a lot of different devices that can be used.

You know, and so it's it's always interesting. I'm curious on, you know, pros and cons of each and, you know, how to best use it. But we'll come back to that.

First, let's talk about the cell injury theory and how PBMs play a role in that. So every cell tries to maintain itself. Right. It was it was it grew and developed and it's its own entity if you will.

It's got its own intelligence. How many biochemical processes per second happen in a cell? An enormous amount. I use the number of million. Yeah. And it may be more, maybe less.

But they think about it that way. It's about a million biochemical processes per second. Every cell. So that means that that cell is working very hard to do its job, whatever it was designed for or whatever the DNA says it's supposed to be doing whatever part of the body it's in.

It has its body has its job at when it's injured. So what's a cell injury? It's not dropping a brick on it. A cell injury is burning it. A cell injury is toxins is infections.

Is it senility gets older, right? All these things are what we call cell injury. And that what the body does is it tries to do whatever it can to bring itself back into balance.

Unfortunately, what happens is it gets to a certain point where it just can't do that anymore. So that's the that's the point of no return. Right there is cell injury is is done and there's nothing else you can do.

That cell then gets recycled right. If it's going to. Undergo apoptosis or I guess necrosis. Takes two options. Okay. Yeah. Yeah it's it's beyond autophagy at this point.

Beyond. Yeah. Yeah. And so it can't repair itself. So it needs to either be killed off or she's going to die. Or just breaks apart. And it's all components are then recycled and used by other cells of the body.

So cell injury then magnetic field therapy. The components of cell injury include mitochondrial damage, decreased ATP production, increased oxidative stress changes in the movement of calcium and magnesium, and other minerals in and out of this, out of the membranes of the cell, in and out of the cell, and and and repairs, genetics, all of that as part of the cell injury process.

What happens that was with magnetic field therapy, actually, interestingly enough, affects every part of that cell entry process. So if you apply magnetic fields before irreversible damage happens, you can't repair the cell.

That's the key. But then how do you time it? How do you know? Yeah. How much how much treatment you should, should have, should use. We can figure that out.

You can't be doing magnetic therapy continuously while you are, in a sense, by living on the planet. And the more you move on the planet, the more electromagnetic stimulation you have in your body as you're crossing the field lines of the Earth, and you're interacting with the, your, fields in the, in the, in the, in the earth itself.

All of that creates dynamic action in the body, which then is used by the body to then help to balance and repair. But as I said often, it's just not strong enough.

So if you apply a stronger magnetic field, then you begin to rebalance as much as you possibly can. And even if you can't, the cells that are going to die, how many cells in an organ?

How many cells in an organ? Good question. I'm not sure. Billions. Yeah. Right. Right. When you think about the body has about 100 trillion cells in it.

So there are billions of cells in an organ, in an ear. An example that I use is the left toe. Let's say your left a little toe decided to get a hangnail.

How many cells have to be damaged before you notice that you have a hangnail? Probably like 50 million or something. Millions. Yeah. Literally millions.

Because our our nervous system, our sensory system is pretty blunt. Yeah. Right. You have to have enough damage. If the body then says, okay, now I have some damage.

I gotta hit that threshold. Yeah. If you're doing therapy on a regular basis, you're helping those cells to rebalance and repair before the damage is permanent.

Looking at what you have damage, then you do biochemistry testing to see whether you have an imbalance in biochemistry. You could do a microscope. Oops.

You could do ultra microscopes. You can see it. I mean, if you have a big red lesion on your hand, the back of your hand, well, you know, you got cellular damage, right?

You don't want to wait till you got can you can you can see it. Right. Ideally you don't want to wait till you can feel it. You can sense it yourself. Right.

You want to be able to try to repair as much as you can as early as you can. That's what keeps you young and healthy. So routine use of this, this technology then helps you to maintain yourself better, longer and and stronger.

Yeah, that makes sense. And so going back to the question of like what? What's the bad? Like what's the right dosage for somebody is there downsides if you're using it all the time.

Like for example, I've got I have an office chair, that has pmfs right, that I'm sitting on when I'm working and I just keep turning it on. Right. Basically, you know, every time I remember just so I can get more positive, you know, pmfs it. Can benefit from you.

Overdo it or is it beneficial? Like, I feel good, right? So I feel good using it. I definitely can tell that it's improved my energy, my stamina while I'm working.

You know, when I was sitting for a long period time, even though I have a sit up, stand up desk, I would get more lower back pain. I don't have that anymore.

And this this office chair is both, infrared and, PMF. Right. So I'm able to kind of couple both of those with it, and I feel like it's made a huge difference for me.

But my question is, you know, like the recommendations are like, use it like twice a day or something like that, right. And so can you overdo it? What are what's the benefits of different types of, maps, different wavelengths. Right.

Like there's a lot of science that goes into this.

Dosage, Intensity, and Treatment Depth

I know obviously you're a world expert in it. So can you help break it down for for myself and then also for the average individual. Right. So there are certain things that we want to do with PMS almost no matter what.

One of the most important things is to decrease inflammation. Right? Everything is inflammation, right? Aging is inflammation. Injury is inflammation, typically.

So what happens then is you want to decrease inflammation. And research is now showing that you need about 15 gauss. Optimally this is through the adenosine receptor.

So adenosine adenosine is one of the molecules for ATP. But adenosine is also used by the body to deal with inflammation. And what research is showing is that the optimal magnetic field for, decreasing inflammation through the adenosine receptor is 15 gauss.

Okay. So if you have less than 15 gauss and you put a magnetic field on the other skin, it's going to help the skin within 1 or 2mm. But that's it. Gonna get deeper.

It's not going to go deeper. Now if you have 15 gauss, it's only going to work 15 gauss there. But if you need to go across a brain or across a long or hard or through a back, then you're gonna have to kind of calculate the dose.

I have a blog on my website about adenosine, so it's adenosine and inflammation. That bug gives you the tables

that shows you the intensity of the magnetic field you need, depending on where how deep into the body you want to treat.

So for example, if you want to treat across the skull, let's say you want to treat the brain or head injury for brain fog for, concussions, toxicities, inflammation, whatever you want to treat the brain to deliver 15 goals across a skull because magnetic fields go right through the skull, go right through the brain as if it wasn't even there, right?

To deliver 15 gauss across the skull to the other side, you need about 4000 gauss. Magnetic field. Okay. Okay. About 4000. Fortunately, magnetic field therapy is safe to the body.

Generally speaking, unless you use a very powerful magnetic therapy machine. And here you're talking about MRI level equipment. You're talking about equipment that's 10,000, 20,000, 30,000 gauss.

Yeah. But most of the time you're not going to be using those for long periods of time. They're too expensive. They're too big. The too bulky they're hard to use anyway.

So they're used periodically. There are devices that are available that you could run on all night. They can run for eight hours a day. They tend to be lower intensity and they're going to be safer.

So what happens is the body tends to ignore the magnetic field that it doesn't want or need. It will react to it. So a study done at University of Virginia where they measure the brachial artery, they expose the brachial already to a magnetic field and then looked at the dilatation and contraction of that brachial artery.

And what they found was within milliseconds the break it brachial already expanded at just as quickly contracted went from expansion to contraction. And then just as quickly it went back to neutral.

So a healthy cell will react. Yeah, but. The normal balancing mechanisms of the body will take that reaction and balance it back out again. Yeah. So getting back to homeostasis.

It gets back to homeostasis and balance. So where it becomes important is where it's out of balance already. So what you try to do when you're out of balance, you're trying to find the best balance you can in your imbalance.

Right where our bodies are doing that all the time. And we age. Why? Because we're not completely balanced. Yeah. Sustain that. The pmfs act kind of like an adaptogen.

Like if we to take an adaptive thermostat. Absolutely. You want your home to be 70 degrees and it's 80 degrees outside. You turn it on 70, the air conditioning comes on, brings it down to 70.

If it's 60 degrees outside, the heat comes on, brings it up to 70 to keep. Exactly what sort. Of effect. And it may bring it down below 70 to 65. Right.

And the rheostat says, turn off, turn yourself off. And then that goes back up again. So it's going back and forth like this. And the body's doing that all the time.

Yeah. And very subtle ways. But that's constantly regulating. So it's a regulatory system in the body to rebalance the regulation system. So the magnetic field therapy then basically if it's not needed by the body the body ignores it.

But if you have a fracture, if you let's let's do a cut. You cut yourself. Yeah. Right. That's an injury. That's cell injury. There's actually tissue injury.

It's not just cell injuries. Tissue injury. And what does the body do. The body's job is to repair that injury. So what does it do. It increases inflammation.

It increases circulation. It, it decreases oxidative stress. It does a whole host of physiologic actions to try to deal

with that injury. And eventually it produces new cells, produces fibroblasts and produces, collagen produces all kinds of cells to close that wound and to make it as, as normal as possible.

Normally when you cut yourself, if you have a deep enough cut, you always have a scar because the body can never repair itself back to complete normality, but it does the best it can.

So what happens is magnetic field therapy has been found to take that wound by giving the body more energy, it will heal that wound in half the time. Right?

That makes sense. Yeah. Right. Now, how about how about things like, like, perhaps like a sinus infection or, you know, if somebody had, let's say respiratory infection, would you isolate perhaps.

Yeah. Let's deal with sinus infections. Very common problem. Right. So a sinus infection an infection is a some kind of a let's say viral process or bacterial process that's now affecting the body of the body, reacts to it with a typical typical what we call triple responsive Lewis.

You get swelling, you get dilatation of blood vessels and so on. So that's a that's an injury. So those cells are now injured due to the infection. So the body's just going to try to flood that injury that injured tissue with circulation and oxygenation and nutrients and DNA.

It gets activated so that you can begin to repair process of the dead cells. So magnetic field therapy then decreases inflammation, improves circulation, increases stem cells, increases ATP production.

So it has all of these actions as a result of that magnetic field. Now the body's already doing it but it's not efficient. How efficient is the body put into taking energy and converting it to work?

I mean, in general, the body's incredibly efficient, or it's constantly working to be as efficient as possible. Exactly. But how efficient is it? It depends on the individual's metabolic health, right.

That's true. Healthy they are. The more efficient, the less. That's absolutely true. What if what if everything is optimal? How efficient is the body?

I don't know, you tell me. About 20%. Really? Okay. 20 to 25%. It's about as efficient as a car engine and converting fuel into work. So we lose a lot of efficiency through heat.

So we use that inefficiency to keep our body temperature up. Right? Right. But in terms of work, it's not as efficient as we want it to be for work. Yeah.

Which is why when you apply magnetic fields to an injury or an infection, the body will heal it much faster. Because now it has more energy and can become more efficient than it would normally be. Yeah.

So if somebody had something like, let's say, respiratory infection or a sinus infection, what it would benefit them to perhaps lay on like a whole body mat, but it would be even better if they had something localized.

Exactly. Intensive. Yeah, exactly. And and at the level where it's going to significantly impact the inflammation. So if you have a, local magnetic field that's only, maybe about five gauss or ten gauss, you're not going to get much benefit from that.

You would have to apply it for a very long period of time, hours. Perhaps the. Lower the gauss, the more time is needed. The less the gossip, more time that's going to be needed.

So it's still going to need an X amount of time at the right intensity for the tissue. Right? Right. But then, then if you have the right intensity then you could do it much better and much faster.

Yeah. Because you can, you know, half the time I'll give you an example. I had a, a spider bite. I was going to go

read on my patio, and I looked down on my leg, and I didn't even know that I got bitten.

I had a quarter sized lesion on my leg, and I'd seen enough spider bites. I knew what it was, so I. What do I do? I put a magnet on it. I happen to have a fridge magnet.

There was a pretty thick little magnet, so I taped it onto my leg and I lay it on the on the patio and was reading a book. Three hours later I looked down. Got This is just a refrigerator magnet.

You put it on. It was. It was a thick. It was a thick magnet. Yeah, it was not. It's not that one of those flat sure. Magnets. Right. It was a pretty substantial magnet.

I caught it early enough, that not enough damage had happened from the infection. The body was still active, acutely dealing with it. And the magnetic field basically just bang.

Just went at it with the body. But the body got help from the magnetic field and it healed basically within three hours it was gone. I, a little girl, who caught the end of her thumb off, said my power tools for health book, pictures.

She cut the end of her thumb off. Now, fortunately, she was three years old, and I was able to with a magnet an hour and a half to three hours a day with a magnet on it, a pulse magnetic field, not a static magnet.

So this was a magnet that also was plugged in and was sending an electrical current in there. Yeah, exactly. Pulsing, pulsing into the body. And so by doing that, what it did, is it it stimulated the body's capacity to heal.

Now that three year old has a much stronger capacity to heal. Right. So literally so there's bone in there. There's nail skin, right. There's connective tissue.

The circulation there's nerves. There's all that stuff that's in a thumb or digit. Literally within 12 weeks she was regrowing her nail. Wow. The first picture after she put it on the finger was black.

The end of the thing was black. You'd expect that because there's no circulation. She cut it off. Right. But but reattaching it, the body basically began to grow into the remaining tissue, and she eventually sloughed off the dead tissue, but she basically regenerated her thumb.

Wow. That's that's an amazing story. And on top of that being amazing, I actually have a three year old daughter as well. What's what's amazing as well is that she was compliant with the bacteria.

But she only did an hour and a half, an hour and a half a day. I wanted her to be doing the 3 or 4 hours a day. Yeah. Well my wife. Another story related to healing like that.

My wife broke her little toe. So basically the top, the toes bent out, she broke it. Up your audio cut out there. So she didn't that I had tapped it and it turned it off.

So she broke her toe, black and blue, swollen and, painful. I put a magnet on it. Same magnet that I use.

Case Studies and Healing Examples

That little girl wrapped it around. Okay, I didn't do that. I'm dynamic and I'm touching my microphone. You're good right now. All right, so she. So I put buddy, take their toll, put her in a platform. So.

So she didn't move it right. Had her do that magnet that she was compliant. She did that magnet for 24/7 basically continuously till the next morning.

Next morning she woke up. No swelling, no bruising, no pain. Then I had her continue to do it for another 24 hours. So continuously 24 hours. Woke up the next morning, walked a mile in tennis shoes.

Wow. Did it for another 24 hours. Walked three miles in tennis shoes and that was that. She was finished. Wow. It's amazing. Now, in order to do it, it needs to be plugged in.

Right. So she just kind of that. Was battery operated as a little girl also had a battery operated device. Oh okay. Yeah. It's not as high in intensity but it was high enough for the local need.

Yeah. Yeah yeah. So you can get battery operated, but you can also get models that plug in I. Plug in, yes. Yeah. When you're plugged in, it's harder to run these models over extended periods of time because they're usually time limited in how long they will run for.

All right. Whereas battery operated runs till a battery dies. Okay. Or you turn it off. Yeah, that's really good to know. I mean, wow, that's so amazing. Case studies right there.

Amazing results with it. And, and so what should people be looking for when it comes to getting these, these type of devices. All right. So the key one of the key lessons that I've learned in the last three years or so, evaluating all the research, is the whole adenosine argument.

Now magnetic field C. And adenosine is also what caffeine acts on. Right. Like the caffeine tends to counteract adenosine. Yeah. Right. Right. Adenosine. It's kind of almost like breaks.

Well obviously you can have multiple things you're talking about. It has an impact on, pain. Right. But it's also kind of like it slows down brain activity.

And so caffeine. Makes you sleepy. Yeah. Right. Right. Which is why people use coffee in the morning. Yeah, yeah. And off the adenosine. Right? Yeah. Right.

So they definitely make you sleepy. So as our day goes on, we tend to produce more and more adenosine to make us. So finally we. Yeah, we're smart. Enough to go to bed, go to sleep and recover and regenerate.

So the adenosine becomes key then for inflammation. But it has not only this effect on sleep and the brain and other neurophysiological structures, but it has this inflammation effect.

When we injure anything. Acute injury causes a flood of demand for ATP, right? Huge demand for ATP. And part of the problem with ATP is we can only generate so much.

Yeah. Because your tissues locally, you don't get circulating ATP that much. Most ATP is very local. And the way it works. When it's when it's circulating, it actually signals a cell danger response in the body.

That's correct. Yeah. So it's a signal that there is there's an event happening. So the ATP was released because of the damage or the injury or the inflammation.

So the body then needs help making ATP. So with acute injuries and therapy helps our body to make ATP. But it also tends to concentrate the ATP where you need it.

With the magnetic field exposure then locally you're increasing the ATP production dramatically. Yeah. But the optimal magnetic field intensity to increase ATP is 15 goes.

Now, the ATP that we're talking about here for decreasing inflammation is on the neutrophil. It's the adenosine receptors on neutrophils. Yeah. Neutral blood.

Right. What's what what white blood cells. Where are neutrophils. Well they're a white blood cell. That's I know it's key for attacking bacteria. They also help drive up certain inflammatory responses.

And where are they in the body. All throughout the blood. No everywhere. Yeah I mean the cells yeah yeah. If the cells have ATP, ATP. So basically everywhere in neutrophils.

But because you have neutrophils in the tissues they migrate out of the bloodstream. Migrate into. The tissues. Right. Well they're basically they're everywhere in the body wherever they're needed.

You're going to have them. So essentially then you can you can fight inflammation. You can decrease increase the availability of ATP in the tissues that need that help.

We ATP, we we basically develop our produce, our bodyweight and ATP every day. Every molecule of ATP in the body is recycled. About 500 times a day. And magnetic fields actually increase the production of ATP.

But ATP by itself does nothing ATP to be used for fuel or for energy, just to strip off one of the phosphates and then it becomes ADP, right? Yeah. So that's called hydrolysis.

So magnetic field therapy does makes the ATP. And that hydrolyzed the ATP and then makes more ATP. So it's a constant cycle of regeneration. And you and use and break down.

So that happens anywhere in the body anywhere in the body that. So basically anywhere you put PMF at the appropriate frequency at the 15 gauss like you were talking about in particular.

You're going to improve the overall, energy efficiency, right? So that in. That, in that tissue. In that particular tissue that you're stimulating. Wherever it's the whole body or whether it's.

Lying on like a mat or something like that. Right? It's going to upregulate things throughout the body, but not quite. Not as much. Right. Just the small increase in efficiency.

That's a problem. And the problem is how long does that ATP last. Yeah. So again ATP without being hydrolyzed without releasing a phosphate to produce the energy, then that energy is used.

And then you have to regenerate it right away. So you're only making enough ATP for the moment. Our heart generates enough ATP for every heart beat. It doesn't have much in the way of reserves.

Right? Making it constantly for every heartbeat we're regenerating the ATP. So that's available for the next beat. So that's how much ATP our bodies are producing.

So some tissues obviously like a ligament or a tendon or a muscle that's not working. They don't it doesn't need much ATP. But the heart, the brain are the parts of the body that are working all the time.

They need a lot of ATP. Sure. Yeah. So we can help those tissues to make more ATP. But the benefit to the the ATP production is short lived. Fortunately, the benefit of the ATP production creates other downstream actions for repair, regenerate and energy and vitality, and so on.

So even though you're generating for a short period of time, you're getting a benefit outlasts the time of the magnetic stimulation. And we rely on that because otherwise we'd have to be doing a magnetic field therapy 24/7.

Yeah. Right. Yeah. So for example, you mentioned the hearts of somebody. Let's say they had, you know, heart disease. They could isolate PMF over their cardiovascular area, hit it at 15 gauss.

Right. And it'll penetrate through, you know, the chest out. Of the right amount intensity. So for a heart you're going to need not 15 gauss. You're going to need enough to get to the back of the heart more.

You probably need about 3000, 4000 gauss over the heart itself. And you have all that information for specific organ types.

Choosing the Right PEMF Device

Stuff like that on your website typically. Yeah. And in the books, in my Supercharged Health book and the Power

Tools for health book. Yes. Yeah. And so that will penetrate in there. Right.

And that person could for you know, where that for let's say eight hours a day, ten hours a day and start up regulating ATP in that all those tissues so they can basically heal themselves and strengthen their efficiency.

Within the depth of that field. Correct. Right. Wow. Really powerful stuff. I mean, this is something that really all my listeners need to know about and be utilizing.

And obviously people can find out a lot more at Doctor Polycom. And, you know, we were talking about like basically how to know because there are a lot of devices out there.

And so people just need to know that the, the proper frequencies that they need. Is that correct? Like, that's one of the big elements of the. The, the proper intensity.

So you have to anytime you buy a piece of equipment, magnetic device, you have to always ask what is the intensity, the magnetic field produced by this equipment.

And I can tell you right now, most of the companies that sell don't tell you that. Yeah. The multi-level marketing companies. Yeah, will tell you that.

You'll want to talk about it. So what they do is they talk about frequencies, but they won't talk about intensity, because they don't have enough intensity.

Many of these devices are 1 or 2 Gauss at the most. Yeah. 15. So 1 or 2 is not going to get you very far. Now, if you have something important to deal with, like cancer or heart disease or Alzheimer's or brain injuries, etc., and you need to have the right magnetic field to do the job, you won't be able to ever get enough out of these weak magnetic field systems.

And these distributors often tell you what all you need is eight minutes a day, right? Right. Well, that's that's absolutely not true. What you what you need is what the tissues need.

And the tissues are going to tell you what you need. Yeah. It's not eight minutes a day. There's no one size fits all for everybody. For every situation. Yeah.

Which is good to know because if you do get one of these lower, you know, lower intensity ones, like I would imagine, you know, I've got this, the higher dose office chair.

And also, Matt, I would imagine it's not putting out like, you know, a strong, intense signal, you know. You know what the magnetic field is for the higher dose.

What is it for Gauss. Right. For Gauss. So not anywhere near 15. But at the same high magnetic therapy perspective, it's not very useful. It does the infrared and it has the crystal stuff as well.

Yeah. That mean give you some levels of benefit. But it's not going. To feel good using it. But yeah the PMIs I'm not getting a whole lot of benefit from that you know.

Yeah okay. And so and then the ones that you have now you have ones that are localized. You have mats as well. So a big part of my journey. Yeah I been working with Magnetic Fields for 30 years.

So I either a slow learner or it's actually a pretty complicated topic. Yeah. So I maybe it's a it's both. Yeah. It's, It's a combination thing. I you're.

A pretty sharp guy, but I mean, any sort of topic like that's this intense can take a while to really learn. About six hour long time. So in my learning process, I used to work with these very low intensity systems, and I discovered that they were not doing as much as I wanted them to do.

So as a medical doctor, I basically I'm trying to treat anything that walks in the door, whether it's somebody who lost a leg or somebody who's got a brain tumor.

Yeah, or. Somebody who's got a cold or a sinusitis. Yeah. You know. Very basic being able to deal with all of this. So I discovered over that over time again, the intensity of the magnetic field.

So then I had to do is I had to go out and find the magnetic devices that we're going to do the job. And that's why I'm Doctor Polycom. I have a list of devices.

In fact, I have a product comparison guide on Doctor Polycom goes through all the different machines and what they do, the different intensities and what they do.

That's very important for people to understand. I also have comparison charts in my books as well. Well, you see that. Then you'll know what you have to deal with.

If you're dealing with, say, cancer, let's say let's say something simple osteoporosis. Or osteopenia. So osteoporosis or osteopenia or a bone density problem.

But which which bones are involved in osteopenia and osteoporosis. All of them. It's systemic. Exactly. It's a whole body problem. So what you need to do is you need to get some of this whole body and strong enough to go through the entire skeleton at a sufficient level of magnetic field intensity, so it has higher density, whole body PMF device to do that.

If you're just treating a tennis elbow. But you know, if you're just treating a tennis elbow, what's what's wrong with the rest of you? Nothing specifically, but the the inflammation, even if it's localized, is going to have some level of effect on on the rest of the body.

All right. But but I we could argue about this. What's wrong with the rest of you? Whatever's wrong with the rest of you, for a person of your age. Right, right. Exactly right.

And you're aging. So everybody's aging. Sure. Right. So do you really need just local therapy? So basically, everybody benefit from whole body. You really should have their body regardless.

But it has to be strong enough to be able to deal with most of the common problems that people have. So typically you're going to need some between 2000 maybe in about 6 or 8000 gauss.

Yeah. So how do you get that Doctor Polycom. There you go. I mean, there are people who obviously sell devices regularly. And I started my journey by just offering education.

Right. And then people started asking, which machine should I get? Well, then, because I offered the advice that they come back to you and say, well, how do I use it? Yeah, exactly.

I said, well, wait a minute, wait a minute. Our deal was that I give you information. Yeah, everything else is up to you. So I said, okay, well, I can't do this.

I can't offer and then not offer support and advice. So but then we started accumulating sort of evaluate and and developing recommendations for devices that I thought were credible.

And I have a blog at my website about a buyer's guide to be perfect. So that's where I'm going to send my my reader or my listeners here check out Doctor Polycom.

He's got the buyer's guide there so you can learn more about this. I know there's a lot of a lot of terminology here that, you know, if you don't understand electromagnetics and physics and things like that, it can be confusing frequencies and and intensities and all that kind of stuff.

But, his website does a really great job of breaking this down. I know for me, I'm more of a visual learner than a audio learner. And so it's good to get this vocabulary and then actually read up about it.

So that way it'll start to sink in. You can really understand this. But you know, the case studies he talked about absolutely amazing stuff. And the science is solid on this.

And this is something we all really need to be aware of. You know, with our 21st century health issues and the kind of challenges we're dealing with now in the 21st century, this sort of technology is something we all need to be able to, access and have access to and utilizing.

So, Doctor Pollack, I want to thank you for your time and your expertise and all the great work that you're doing. Guys, again, you can check them out.

Doctor pollock.com and his last name is spelled PA uk.com doctor Polycom lab of course in the show notes and everything. And any last words of inspiration anything we didn't cover that you want to just share, right? Right here at the end?

Yeah. I think this is a whole new technology and we, we take things for granted until we can't write human beings or that way we tend to react to problems.

We don't tend to do things for ourselves to keep ourselves out healthy, typically until we have to. But magnetic field therapy keeps you going longer, better, faster.

So you called entropy, but we age because we don't have enough energy to to be able to fight the aging process. Yeah. That means that there is no person on the planet who doesn't need magnetic therapy, and you could spend a lot of money doing all these different treatments, whether it's infrared or hyperbaric or ozone therapies or, light therapies, etc., etc., etc..

I started my journey with acupuncture, and I couldn't do acupuncture in 1990 because people didn't know what it was. So I started working with magnets to stimulate acupuncture points of meridians.

And then eventually I discovered very quickly. In fact, I discovered that magnetic therapy healed the tissue. Acupuncture doesn't heal the tissue. And so I stopped doing acupuncture.

I basically focused on magnetic therapy because I knew I could do a lot more for people. So I discovered over time that the best value of a therapeutic system that you can get is magnetic field therapy.

Yeah, you could spend money on all these other technologies and they all work synergistically. But if you can only afford one modality. Maybe, maybe even the rest of your life, magnetic field therapy is going to probably do a much better job for you generally, than most of the therapies.

And you could do it at home, right? You can't go somewhere to get therapy. You can. You can help you temporarily. But what happens when you're when you leave the office?

You still need it. Yeah. So short term blast the therapy is going to give you some benefits, but it's not the same as doing it every single day. And that helps you with come, come what may.

Yeah, absolutely. Well thank you so much for your expertise and your time, Doctor Pollack. Again, check him out on Doctor Polycom and we'll see you all in a future interview.

Be blessed everybody.