Introduction to PEMF and Dr. Pawluk

Welcome back to the longevity summit. I'm your host, Doctor David Jockers. And today I have the honor of interviewing Doctor William Pawluk. He is the foremost authority on the use of pulsed electromagnetic field therapy in North America.

We're going to talk all about how pemf, s or pulsed pulsed electromagnetic frequencies, how they impact inflammation and longevity in your body. And so William Pawluk, he is a holistic doctor in your 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 in the use of PMF therapy in North America.

And he's worked with magnetic field therapies for 30 years and established a website. It's Doctor Pawluk pawluk.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 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 drpawluk.com. Without further ado, let's go to the interview. Well, Bill, always great to connect. And of course, you know this topic of pulse electromagnetic frequencies.

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

And so I want to go into this what are p 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 negative reasons.

EMFs vs PEMF: Frequencies, Resonance, and Containment

And so let's talk about pimps, what they are and the difference between them and emfs. All right. So a 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 our radio frequency field. To notice magnetic fields that are at a very high frequency.

And there's another field in an MRI that is a static magnetic field. So in other words the magnetic field is just there. Right. 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 for some reason that have been educated to think in terms of frequencies, unfortunately, they've been educated to think in terms of frequencies, primarily by people who don't have anything else to sell.

Sure. Yeah. Right now I understand the frequencies of the concept of frequencies because everything's resonant. But you know what's resonant? It's the electromagnetic field.

That's right. Can 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 molecules of magnesium are have electrons and protons and so on. Certainly around them. And they're vibrating. They're moving at a certain frequency. That's 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. Right. So calcium and chloride will be calcium chloride sodium and 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. So everything they 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 of the universe is the electromagnetic.

And the fourth force of the universe is gravity. Okay, yeah. The biggest force of the universe, the biggest thing encompasses the entire universe is electromagnetic.

It's more common than gravity. Wow. Yeah, actually. And so 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 the, the, 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. Emfs are basically anything that's magnetic. But most of the emfs that we have concerns about are broadcast. They're what I call open loop that broadcasts into 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 of 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.

One of the laws of physics is that where you have electricity currents, you have magnetic fields at the same time. So the electrical field pulses at the same time is producing a magnetic field.

It 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 there 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 there. High frequency most most of the time. So that's a different sort of animal, if you will, relative to the body then PMA so contained and emfs are not contained.

Yeah that's a good, good explanation. And also how about the EMS in nature. Like for example, if you go out in the forest there's emfs coming from the trees.

Is that high frequency? Low frequency. They tend to be low frequencies. Yeah. So 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 foreign as well. We transmitted passing through us. The gamma rays pass through us, X-rays pass through us. All these other frequencies in the universe basically just pass radon through us. Okay.

Now microwaves unfortunately, the the the faster the frequency, the shorter the wavelength and the shorter the wavelength, the more absorbed by the body.

Environmental Exposure, Grounding, and Dose

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 it can destroy tissue and it does 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 they 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 radio frequency.

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.

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, and 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. Because microwave frequency is heating it up. It's heating it up. It's superficial.

It's not going to necessarily damage, you know, 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 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.

One exposure is not going to cause a brain tumor. Sure. Yeah, sure. Right. Do you have to damage the genetics of the of the tissues, of the cells in the brain?

And the the body's going to try to repair that. And while it's trying to repair it, of course you're not doing the damage that's caused. So the key with Wi-Fi and the key with that kind of EMF exposure is the dose.

Right. And then dose includes the amount of EMF that the intensity of the EMF and how much of that you accumulate over time. Yeah. So 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 is 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 then 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 exposures or most of us are passing.

Yeah, right. Right. If you unless you have a a router and you're working in a router near a router eight hours a day or 12 hours a day, then 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 a long period of time.

What's a good distance people should you know, there's probably a lot of people listening to have a router perhaps in 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 typical basis?

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

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

The good thing about pulse magnetic fields is they offset the irritation effects from emfs. Yeah. Well if you're doing EMF therapies 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 decreasing the body's reactivity to it. Right. Unless you're totally block the EMF. Yeah. If it's hitting your body, you're getting that exposure and your body's going to react.

And 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. Cumulative. Yeah, absolutely. Yeah. So PMS 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 emfs from nature going out barefoot grassroots and being around trees and things like that. A lot of things that most humans in today's society and they're in first world countries are not doing very much of true.

Yeah. Yeah. True. So 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 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, the called telluric currents, and they're all over the planet.

We can't stop them there. They're naturally, in addition to that, we are exposed to the Earth's magnetic field. Now, the Earth's magnetic field is about half a point five gauss GA.

USS 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 hugged trees. But if you didn't hug trees, you at least 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?

Not going to be that helpful. So in general, they help you to balance. But what do people die from before let's say the last 100 years infections. Most sections in trauma.

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 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 good to help, but is it enough? Yeah. I considering what happens in our environments. It's not enough. I don't think. Yeah. Yeah. So let's talk about these PMS 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 PMS. All right. So PMS 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, is 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.

Essentially, as as the magnetic field is passing through the ions in the body. So our bodies are electrolytes. Super. We say that the water six types of water.

It's not water. And it's not even saline. It's electrolyte soup because it's so loaded with electrolytes and ions, that magnetic field is interacting with all the iron 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, 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 could rebalance your body's bio, 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 therapy is to replicate acupuncture. So basically acupuncture the acupuncture system is a is a DC current system.

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

And with acupuncture that's what you're doing. You're trying to balance out whatever deficits there are, whatever excesses there are, whatever. And if insufficiency there are tries to balance them, a balance.

How PEMF Supports Cellular Repair and Energy

The body then is functioning harmoniously and harmonically to do the best work that it can. But magnetic field therapy apps 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 GeV which is curly and 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%.

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 it was was. Like laid on. They laid on a pad. On a pad. Yeah. Okay. A whole body magnetic pad. Yeah. Yeah, exactly.

If you expose 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 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 I know 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 a office chair. So there's a lot of different devices that can be used, you know.

And so 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 maps 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? Enormous amount. I, I use the number of million. Yeah. And maybe more. Maybe less. But 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, 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.

And 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? It 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. That cell injury is is done and there's nothing else you can do. That cell then gets recycled. Right. If it's.

Apoptosis apoptosis or two options okay. Yeah. Yeah. Beyond autophagy at this point right. Yeah. And so it can't repair itself. So it needs to either be killed off or just going to die.

Or just breaks apart. And its 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 the out of the membranes of the cell, in and out of the cell, and then and and repairs. Genetics.

All of that is part of the cell injury process. And what happens then was 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. And that's the key. But then how do you time it. How do you know how much how much treatment you should should have should use.

We can't figure that out. And you can't be doing magnetic therapy continuously. Well, 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 telluric fields 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 the 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 you're left little toe decided to get a hangnail.

How many cells have to be damaged for you to notice that you have a hangnail? Probably like 50 million or something. Millions. Literally millions. Because our our nervous system, our sensory system is pretty blunt.

Yeah, right. You have to have enough damage that the body then says, okay, now I have some damage. 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.

And what you have damage. Then you do biochemistry testing to see whether you have an imbalance in

biochemistry. You could do microscopes, you can do Altra microscopes.

You can you can see it. I mean, if you have a big red lesion on your hand, the back of your hand, while you know you got cellular damage, right, you don't want to wait until you got so you can see it, right.

Ideally, you don't want to wait until you can feel it because sense it yourself, right? You want to be able to try to repair it as much as you can as early as you can.

That's what keeps you young and healthy. So routine use of 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 best. 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 pem EFS, 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, PM efs. In and 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 of time, even though I would 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 a PM, right. And 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, of PM APS different wavelengths.

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

All right. So there are certain things that we want to do with PMF 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 the identity 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 identity receptor is 15 gauss.

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

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

I have a blog on my website. I bought a Denison, so it's a Denison and inflammation. That blog 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 across a skull because

the magnetic fields go right through the skull, go right through the brain as if it wasn't even there. Right?

So deliver 15 goals across the skull to the other side. You need about 4000 gauss magnetic field.

Inflammation, Adenosine, and Therapeutic Intensity

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 that's 10,000, 20,000, 30,000 gauss. Yeah. So 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. They're 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 could 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 study done at University of Virginia where they measured the brachial artery. They expose the brachial artery to a magnetic field and then looked at the contraction of that brachial artery.

What they found was within milliseconds, the brachial artery expanded and 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're trying to do when you're out of balance you're trying to find the best balance you can in your imbalance.

Right. Right. Where our bodies are doing that all the time and we age. Why? Because we're not completely balanced. Yeah. So you're seeing the PMF acts kind of like an adaptive Jin.

Like if we take an adaptive Jin like a thermostat. Absolutely. You want your home to be 70 degrees and it's 80 degrees outside. You turn it on 72, air conditioning comes on, brings it down to 70.

If it's 60 degrees outside, the heat comes on, brings it up to 70. So it brings a sort of effect. And it may bring it down below 70 to 65. Right. And the real stat says turn off, it turns off and then it goes back up again.

So it's going back and forth like this. And the body is doing that all the time. Yeah in very subtle ways. But that's constantly regulating. So it's a regulatory system in the body.

So rebalancing and regulation system. So the magnetic field therapy then basically if it's not needed by the body the body ignores it. If you have a fracture let's let's do a cut.

You cut yourself. Yeah. Right. That's an injury. That's cell injury. That'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 decreases oxidative stress. It does a whole host of physiologic actions to try to deal with that injury.

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

Now normally when you cut yourself, do you have a deep enough cut? You'll 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.

That makes sense. Yeah, right. How about that? How about things like. Like, perhaps like a sinus infection? Or, you know, if somebody had, let's say respiratory infection.

Would you could you isolate emfs. Yeah. Let's deal with sinus infections. Very common problem. Right. So a sinus infection and 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 response of Louis, you get swelling, you get to bud 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 going to do is 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, but 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 it 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 less.

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. 2,025%. It's about his 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.

Which is why when you apply back that it feels to an injury or an infection, the body will heal it much faster because now it has more energy and it 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. 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 5 or 10 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 gauss, the more time is going to be needed.

So it's still going to need x amount of time at the right intensity for the tissue. Right? Right. But then if you have the right intensity then you could do it much better and much faster because you can heal in half the time.

I'll give you an example. I had 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 had got bitten.

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

I taped it on to my leg, and I laid on the on the patio and was reading a book. Three hours later, I looked down,

gone. And this is just a refrigerator magnet.

And it was a thick it was a thick magnet. Yeah, it was not. It's not one of those flat 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 acutely dealing with it, and the magnetic field basically just bang. Just went at it with the body. Well, the body got help from the magnetic field and it healed.

Basically within three hours it was gone. I had little girl who cut the end of her thumb off, said, my power tools for health book I 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 would have bagged it on it. 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 the 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. There's the circulation.

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

The other thing was black. You'd expect that because there's no circulation. She cut her 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 magnet.

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

My wife broke her little toe. So basically the toes bent out. She broke it. So she broke her toe. Black and blue, swollen and painful. I put a magnet on it.

Same magnet that I used in that little girl. She wrapped it around, so she. So I put Bunny, taped her toe, put her in her 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 the continuously until 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 of tennis shoes. And that was it.

She was finished. Wow. That's amazing. Now, in order to do it, it needs to be plugged in. Right? So she just kind. Of oh, that was battery operated. And the little girl also had a battery operated device.

Okay. Yeah. Yeah. It's not as high an 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.

Choosing the Right PEMF Device

I plug in, yes. When you're plugged in, it's harder to run these models over extended periods of time because they're usually time limited. And how long they will run for. Right.

When battery operator runs until a battery dies. Okay. It off. Yeah, yeah, it's really good to know. I mean, wow, it's so amazing. Case studies right there. Amazing results with it.

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. Adenosine is also what caffeine acts on. Right. Like the. Caffeine tends to counteract adenosine. Yeah. Right. Right. The density is kind of almost like breaks.

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

And so. It makes you sleepy. Yeah. Right, right. Which is why people use coffee in the morning. Yeah, yeah. Turn off the adenosine. Right. Yeah. Right.

So the adenosine makes you sleepy. So as our day goes on, we tend to produce more and more adenosine to make us. So we finally be 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 man 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 in the way. It works. When it's when it's circulating, it actually signals cell danger response in the body. That's correct. Yeah.

It's a signal that there is a 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 therapy helps allow you 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 optimum magnetic field intensity to increase ATP is 15 goals. Now the ATP that we're talking about here for decreasing inflammation is on the neutrophil.

It's the adenosine receptors on neutrophils. And neutrophils blood cells right. What what what what blood cells. Where are neutrophils. Well there are white blood cell.

That's I know it's key for attacking bacteria. They also help drive up certain inflammatory responses. Where are they in the body. All throughout the blood.

No everywhere. Yeah. Even the cells. Yeah yeah. Even the cells have ATP ATP. So basically. Everywhere neutral fills. But because you have neutrophils in the tissues they migrate out of the bloodstream into the tissues.

Right. Right. Well 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 hope we basically develop or produce our body weight 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, for energy.

You have to strip off one of the phosphates and then it becomes A and DP, right. Yeah. So that's called hydrolysis. So magnetic field therapy does makes the ATP and that it hydrolyzes the ATP and then makes more ATP.

So it's a constant cycle of regeneration and and use and breakdown. So that happens anywhere in the body. Anywhere in the body that. Is anywhere you put PM f at the appropriate frequency at the 15 gals like you were talking about in particular, you're going to improve the overall energy efficiency, right?

So the. 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 kind of upregulate things throughout the body, but not quite. Not as much. Right. A small increase in efficiency. There'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, other 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, regeneration 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 over seven.

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 gals.

Right. And it'll penetrate through the chest. The right amount of ten. So for a heart you're going to need not 15 goes you're going to need enough to get to the back of the heart. For about 3000.

4000 goes over the heart itself. And you have all that information for specific organ types, stuff like that on your website. Typically, yes. And in the books in my Supercharge health book and the Power Tools for health book.

Yes. Yeah. And so that will penetrate in there. Right. And that person could 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, and strengthen their.

Efficiency in the, 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 pawlik.com.

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, the proper frequencies that they need.

Is that correct? Like that's one of the big elements of it. 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 of 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 don't tell you that. You don't 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., then 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 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 mat, I would imagine it's not putting out like a, you know, a strong intense signal.

You know what? You know what the magnetic field is for the higher dose. What is. It or goes. Right for Gauss. So not anywhere near 15, but at the. Same magnetic therapy perspective is not very useful.

It does the infrared and it has the crystal stuff as well. Yeah. That will give you some levels of benefit, but it's not going. To feel good using it.

But yeah, the PM I'm not getting a whole lot of benefit from that. 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've been working with Magnetic Fields for 30 years. So I'm either a slow learner or it's actually a pretty complicated topic.

Yeah. So maybe it's a combination. Yeah, exactly. It's a. Combination. Of things. You're a pretty sharp guy. But I mean, any sort of topic like that's this intense can take a while to, to really learn. A 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 tried to treat anything that walks in the door, whether somebody who lost the leg or somebody who's got a brain tumor.

Yeah, or somebody who's got a cold or a sign of situs. Yeah. You know, basically being able to do with all of this. So I discovered over the 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 on Doctor polka.com 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, but 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 do something simple osteoporosis or osteopenia. So osteoporosis

or osteopenia are 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 something, 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, 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 we could argue about this. What's wrong with the rest of you? Whatever's wrong with the rest of you, for a person your age. Right? Right. Exactly right.

And you're aging. So everybody is aging. Sure. Right. So do you really need just local therapy? So basically, everybody benefit from whole body.

Final Takeaways on Longevity and Daily Use

You really should have whole 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? There you go. I mean, there are people who obviously sell devices regularly. I started my journey by just offering education.

Right. And then people started asking me, well, 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 then we started accumulating. Started and and developing recommendations for devices that I thought were credible.

And I have a blog on my website about a buyer's guide to perfect. So that's where I'm going to send my my reader. My listeners here check out drpawluk.com.

He's got the buyer's guide there so you can learn more about this. I know this 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 the sound. 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 will start to sink in. You can really understand this, but you know, the case studies you talked about absolutely amazing stuff. And the science is solid on this.

And so 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 be 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 pollack.com.

And his last name is spelled pawluk.com. Com we'll have a course in the show notes and everything. And any last words of inspiration anything we didn't cover that you wanted to share. Right. Right here at the end.

Yeah I think this is a whole new technology and we take things for granted until we can't. Right. Human beings are that way. We tend to react to problems.

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

So it's 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 can spend a lot of money doing all these different treatments, whether it's infrared or hyperbaric or ozone therapies or light therapies, etcetera, etcetera, etcetera.

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 and 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, 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. So you can spend money on all these other technologies and they all work synergistically.

But if you can only afford one modality for maybe even the rest of your life, magnetic field therapy is going to probably do a much better job for you generally than most other 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. No short term blast of therapy is going to give you some benefits, but it's not the same as doing it every single day. And that helps with come, come what may.

Yeah, absolutely. Well, thank you so much for your expertise and your time, Doctor Pawluk guys again, check them out. drpawluk.com and we'll see you all in a future interview.

Be blessed everybody.