Using PEMF Therapy For Nervous System Health Transcript

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Introduction and Background in Medicine

Welcome, Doctor Pawluk. I am so glad you're here. I'm going to ask you to introduce yourself. Explain why you've become such an expert in post electromagnetic fields.

Bill, take it away. Thank you very much. Should I call you Terry or Doctor Weiss? Terry is fine. So thank you, Terry. So my background is pounding medicine.

So I did family medicine for many years, and I was, medical director for, Founding Medicine Group in new Jersey. We had 14 family physicians, the biggest family medicine group on the whole East Coast.

And so we shared patients a lot and won over a period of a week or two weeks. We actually had two admissions for GI bleeding, one person almost died. So gastric bleeding, the commonality for them was IB program.

And so I kept I said to myself, this is stupid medicine. This is like the definition of insanity. Doing the same thing over and over and over again, not expecting any bad things to happen.

Never mind good things, but bad things to happen. So anyway, so I said, I decided to study acupuncture and find another solution for pain management that was not going to harm people or hurt people.

And during my studies with acupuncture, people that 1990 people didn't know what acupuncture was yet in this country. And so I had to find a different way of doing acupuncture like treatments without using needles.

So then I discovered that in the Orient, they were using a lot of magnets on acupuncture points. And so I started using magnets and discovered that the magnets were doing a bunch of other things.

In addition to acupuncture, they would improve healing of wounds, and they would decrease inflammation in local tissues, which are things that you don't normally see with with needles, acupuncture needles.

And the more I worked with, magnetics of all kinds back braces, inserts, magnetic necklaces, bracelets, pads on the body, pads on a bed, etc. the more I discovered that again, magnetic fields did a lot more than just acupuncture.

So essentially I moved away from acupuncture and just looked at magnetic field therapies and began using them more extensively. Eventually, as I was trying to understand, the literature, was that literature was buried in Eastern Europe, was buried in German and Russian, Ukrainian, Polish, not English.

Or you had a little abstract snippet, as you've seen, if you go to PubMed, there's little snippets. So along the way I met a doctor and PhD from the Czech Republic, a doctor, Jarvik, who had translated a lot of that literature on magnetic field therapies for his PhD in rehabilitation using PMS for rehab.

And he had this manuscript. It was pretty rough. So he gave me the manuscript. We put it together and basically published a book called Magnetic Therapy in Eastern Europe.

Our review of 30 years of research for that book. I don't recommend it for the average person. Clinicians might like it just to see what the history is, but it's really too technical.

It's really highly summarized. It's a lot of abbreviations. But that convinced me that this technology had a really sound physiologic basis.

Discovering Magnetic Field Therapy

Good clinically, but there was some really good understanding, some of the mechanisms behind pmfs of what they did in the body. So I started working with magnetic systems from Europe, purchased whole body magnetic systems, used them for quite a while, and then after about 30 years total of working with magnetic fields.

Now I published two books. One is called Power Tools for Health at Power. Tools for health was again to provide more science for people about the use of magnetic fields.

So I discovered and over the years of reviewing the literature, that there are about 2527 different actions of magnetic fields in the body, physiologic responses of the body to magnetic stimulation, and they form the basis behind what magnetic field therapy does.

Now we're used to think in terms of a disease or maybe even a symptom. And then you have a treatment. Each disease, each symptom has its own specific unique treatment, which is not true.

Magnetic field therapy has about 27 actions and probably even more. And they're all unique by themselves. So it doesn't matter what the disease is, all these actions happen in physiology, whether you're a dog or an elephant or a human.

But also, I reviewed about 50 different health conditions and presented the science, the studies that have been done for those different health conditions.

And what of those health conditions? And in fact, that's in my Power Tools for health book is M. S. multiple sclerosis. And there's a there are numerous studies with the use of pmfs with Ms..

Oh yeah. We should stop at let's define p m not everyone listening. We'll we'll know what that is. All right. That's perfect. Thank you. So P Emfs stands for pulsed electromagnetic fields.

And the elephant in the room is emfs. Everybody talks about emfs 5G and microwaves, cellphones, Wi-Fi and all that. Those are categorized as emfs. I call those environmental magnetic fields.

Yeah. Big difference. Right? They're electromagnetic fields, but they're environmental. So there are two basic kinds of magnetic fields then. Well, three.

One is the static magnet that I started working with and stopped using because they are very limited in what they can do. And then there are the pmfs, which actually were discovered and used way before emps became an issue.

So the difference is that emfs are broadcast into the environment. They have wavelengths, whether it's microwaves, whether it's a radio waves, whether it's TV waves, whether it's radar, you name it, those that have wavelengths.

And so they go on forever. So I call those open loop. Pulsed electromagnetic fields are created uniquely by current flowing through a wire. And this is what we call the right hand rule.

The current is my thumb, the wire is my thumb. And the magnetic field is developed in a current flowing through a wire perpendicular to the flow of the current.

But as the as a current, pulses are likely to power line currents are like 5050 cycles per second or 60 cycles per second, and is pulsing at this rate.

So it's going up and out and coming back. It's collapsing on itself every time the current flows or pulses, the current, the magnetic field pulses out and comes back down again.

So pmfs are designed for health use? Yes. They're not designed for communication. Yes. Yeah. At the risk of air maps is because they are wavelengths, particularly the the barrier maps.

If you will. The wavelengths are extremely short. And because they're short, they get absorbed by the body. And so that's the purpose of a microwave oven.

It's extremely short. And magnetic fields are magnetic fields are electromagnetic waves. And as a result they cook. They. Yes. So that's a very different use of a can we use radio ablation to kill nerves and to burn warts and tissues.

So you can with destructive purposes. But again they're destructive. They're not healing. They're destructive. Whereas pmfs are not destructive. They are healing for that particular purpose.

How does the PMF work then? So once a magnetic field is produced, it basically goes out and it comes back as it goes out. Let's say my arm.

What PMFs Are and How They Work

So as it goes out, it goes basically into my arm. It comes back out again. It moves in and out, pulses in and out. They give it a better visual would be the wind. Yes.

Hey, the wind is blowing through the trees. And we only got to where we know that we have wind is the leaves are moving. Yes, yes, yes they're moving.

So the same thing happens with the magnetic field in the body. It's like the wind. It goes into the body, goes completely through and back in again or back out again.

So out and back in. And as it's pulsing, it's as if the body wasn't even there. So the body is basically completely invisible to a magnetic field. Wow.

What the magnetic field. So the magnetic field ignores the body, doesn't even know it's there. Yeah. Yeah. Already knows it's there. So as the magnetic field pulses into the body, it goes in through the tissues and back out again because nothing in the body stops the magnetic field bone, brain, that skin muscle doesn't matter.

It's completely transparent to the magnetic field. But as it passes in and out, passing in and out, what it's doing is it's creating charge. It's creating current.

It's creating basically increasing the energy levels in the tissues. So the body reacts to that magnetic field through induction. So there's an induction of a magnetic field by the tissue by the body itself.

The magnetic field doesn't do the charge. The body does the charge. Not a field interacts with ions. I'll give you an example. Faraday's law that this is all the principle.

Faraday's law. Faraday Michael Faraday in the 1800s discovered that if you take a loop of coil of copper wire and you put a light bulb in that circuit and you close that circuit and that pulse of magnetic field into that circuit, past the copper wire, the light bulb lights up.

That's called induction. He said that the higher the induction, the higher the magnetic field, the faster it reaches its peak, the more charge gets produced in whatever, including the body.

So the magnetic field then is interacting with ionic structures, anything with charge in the body. So every molecule in the body has a charge positive or negative.

Essentially there are very few that are neutral, but most proteins acts cell membranes, cells themselves, mitochondrial membranes, etc. all of these are basically charge carriers.

And as a as a result, the magnetic field is activating all of this. And that's what ends up producing those about 27 different actions in the body. And of course everyone listening here, cells, they're very much electrical organs.

Most of our cell membranes work and communication depends on that charge. So this is talking to our cell membranes talking to all of our receptors. And in your experience apparently it's doing helpful things as opposed to harmful things.

How how does this PMF reduce pain in your experience. Yeah, yeah it's a sense for that. Sure. Let's back up a little bit more. Let's go back to the 27 different actions of magnetic fields.

So the question becomes what causes pain as one of the actions of magnetic fields. So pmfs have two actions relative to magnetic fields. One is it has a natural painkilling effect like Tylenol anti nociceptive.

It's called source natural Painkilling effect. The second thing is the cause of the pain. So if all I do is to treat the pain itself, we're not doing a great job with magnetic field therapy.

You might as well just give somebody a narcotic right. But that's not our goal. Our goal is not to just reduce the pain, because if you all you do is reduce the pain.

It comes back if you don't take care of the cause. Oh yeah. Absolutely. So the goal then with PML therapy is to reduce as much as you can the cause behind the pain, and that requires some degree of healing.

It may require improving circulation so you can get pain from lack of circulation in the tissue schema. Right. You can get pain because of inflammation.

Inflammation is caused, causes swelling and tissues, which then causes distortions of nerves and causes decreases in the ability of nerves to conduct or the nerves become hyper irritated hyper excitable.

It can also cause a decreased production of ATP, decreased production, and function of mitochondria. So all of these are different components of the actions of an injury to attention that then results in pain as one of the byproducts of that pathologic process or path the physiologic process.

So anything yes. So that process can cause pain. So then the goal then would be to try to remove that. So one of the key functions of pmfs therapies to improve circulation.

Another key function of PMF therapy is to decrease edema. Another is to decrease inflammation. And most of the time this is the one that I rely on the most.

Geena is usually pretty obvious, right? If you put a bat around an arm, you're going to cut off the blood supply, you're going to get pain of the heart, or whether it's a shoulder or whatever.

Skin is a major contributor to pain. Circulation becomes important, but inflammation is the most common cause of chronic pain. So therefore it's inflammation.

And along the way if you happen to improve circulation because again, the magnetic field doesn't decide what the body's going to do with it, the body decides what it's going to do with it.

You're presenting this stimulus and then the body says okay I can use this energy. And what am I going to do with it. Well I'm going to obviously I'm going to prove circulation, I'm going to have a painkilling effect, I'm going to reduce inflammation etc..

So all the different actions and magnetic fields and what are the key actions of magnetic fields, of course, is acupuncture. And one of the best uses of acupuncture is pain reduction.

Why does acupuncture reduce pain. It's stimulating endorphins and encephalitis. It's increasing serotonin. It's starting to stimulate all kinds of neurotransmitters in the brain and in the body. Yes.

Right. Yes. It reduces cytokines. It reduces, mast cell releases and so on. So all of these are sort of secondary

actions of, of, acupuncture.

Pain Relief and Inflammation Reduction

So a magnetic field does all that to the needle. So that sounds pretty good. Yeah. You're getting free acupuncture. At the same time you're doing magnetic therapy for other reasons.

And is this magnetic therapy a local one that I'm putting over part of the body or, how do we deliver that? All right, so the second book called supercharged your help with pemf therapy.

I go into different types of devices. So if you have local devices or you have access to treat a chest or a belly, or you have devices that will treat the whole body.

So you have to kind of pick and choose that machine, the equipment you want for the for your goals. Yeah. And then you could have very low intensity magnetic field devices and they are available in the market, which I don't advocate.

And I'll tell you why in a second. But you can have variations of intensity going from anywhere from about let's say half a gauss. So Gauss is a measure of magnetic field to U. S.

or gas or gas. So the Earth's magnetic field is half of those on average. That's it. Okay. All right. So you can have machines that are lower than the Earth's magnetic field.

But the Earth's magnetic field is static. So if you pulse a magnetic field, even though it's lower into the Earth's magnetic field, they're going to interact and produce a more dynamic response.

And then you increase the intensity going up upwards as much as an MRI machine. You could have magnetic fields that are 10,000 gauss, one Tesla. All right.

So you have a range huge range of intensities. And that's important because what we found out research has shown that magnetic field therapy by decreasing inflammation.

What are the mechanisms of action to decrease inflammation is to stimulate the adenosine receptor. And the adenosine receptor is very important in inflammation, both acute inflammation and chronic inflammation.

The ideal magnetic field to reduce inflammation turns out to be 15 gauss. So at the adenosine receptor, which sits on the neutrophil, then the magnetic field stimulates side adenosine receptors optimally needing 15 dose so that you have to have a minimum of 15 tasks.

But 15 gauss is only going to work superficially, like basically in the skin, because magnetic fields drop off and intensity very rapid, just like we have with radiation. Ionizing radiation.

All right. So magnetic field therapy is a form of radiation. But it's not ionizing. It's not damaging or harmful. But it still has the same principles like sound and light and heat and cold.

And so on. They drop off very rapidly as you move away from the source. So in other words, you have to deliver 15 gauss at the tissue. That means you have to calculate, like we do with ionizing radiation.

We have to calculate the dose of the magnetic field that you need at the target. Sure, sure. So this makes a lot of sense. So for the brain for example for Ms.

you want to stimulate across the skull. And again the skull is transparent to the magnetic field goes right on through. As a result if you want to deliver 15 gauss across the whole brain, you're going to need to have about a 4000 gauss magnetic field.

Are there devices like that? Absolutely. I work with those every day. Okay, sign me up. So yeah, when we get to Ms.. This is to the specific topic of Ms..

And magnetic field therapy is amazingly important and helpful in Ms.. Because again if you deliver, he is the right magnetic field intensity that you can actually heal.

The lesions can heal the plaque. Okay. So have you seen this. Tell us more. Tell us about some of these cases. Yeah. So what you do is you do MRI. And so MRI shows you plaque MRI's are variably helpful in distinguishing the full dimensions of the lesion.

Right. So plaque is an assessed like a volcano. It's called a penumbra. If the center of the volcano where the most damage is and as you move away from the center from the tip of the volcano, as you move farther, farther away, there's less and less damage as you move away towards the base, at farther out into the environment.

Well, the same thing with the plaque. You have the center area of the plaque that has the most ischemic actions, or the most inflammatory action, or the most tissue killing action, apoptotic or necrotic.

It can produce necrosis, which basically kills the tissue. So as you move away from it, then you get more and more functional change as opposed to pathologic change.

The highest density of the plaque, you have dead tissue. And one of the caveats about magnetic therapy is magnetic field therapy does not raise the dead.

Dead tissue is dead tissue. You can make it a prettier looking scar, but it's still a scar. But as you move away from the dead tissue, you start to have variations of degrees of a pathologic and functional change.

So as you move farther and farther away, the magnetic field is going to have the most impact on what can be changed on the stunned tissue that is struggling but is still alive.

It's all life. And if you do the magnetic field therapy, then that tissue has a chance to recover and live out its full life or at least live a reasonable amount of time before it gets replaced.

Apoptotic by, you know, the way the brain normally heals and correct problematic tissue. So how many sessions would one need to recover the marginal tissue.

All right. This is something that you and I say all the time as clinicians when am I going to get better. Yeah. People hear I hear that all the time. And so and what's the answer.

Well then it depends on many, many things, many factors. So the same thing happens with PMA therapy. The again the more damaged the tissue is. And we know that brain cells don't heal well, it takes a lot of work for a brain cell to recover to its full optimal functioning.

And even if it's not 100% normal, it can still function for quite a while.

Device Types, Intensity, and Treatment Delivery

And so if you could improve that function so peanut therapy basically works at three and three sort of phases if you will like with pain killing the natural nociceptive effect.

So you can improve physiologic changes very, very quickly by improving circulation, by decreasing swelling, by changing by increasing neurotransmitter production, by increasing the ability of the cells to talk to each other.

All that happens very rapid. So that's the physiologic phase. Basically what the magnetic fields are do a second phase is to improve function. So the more physiologic improvement you get then you begin to see improvements in function.

And that could take a longer time. Function depends not only on improving physiology but function also depends on healing recovering the tissue. And so what happens then is that the healing component of this is the most important P in a therapy has actually been found to increase the growth or development of neural stem cells.

Oh my goodness that is huge. Everyone. Stem cells stem cells to get up or 100% increase in neural stem cells, add about 150 growth factors that go with those stem cells.

That means you have the capacity then to heal the brain. So you have the capacity to heal the damage to the extent that it can be healed. So do these kind of devices exists or is this only a research?

Or use it? I use it all the time. Okay. Tell us more. So again when when you did with them. That's one of the problems with Ms.. So we talk about MRI and plaque.

You could do MRI. You could do the functional MRI. You could do spec scanning and so on. And we do different functional tests of the brain. So the MRI the classic MRI it doesn't tell you function.

It gives you some sense of the amount of damage and how much possible residual benefit you're going to get. And we see this with stroke all the time. You see this with TBI.

So magnetic field therapy by doing all these things you can improve spasticity. You can improve fatigue. You can improve walking motor function. You can improve pain.

You improve circulation. You can improve cognitive function. You can improve speech function. And you can again improve brain fog. Just ability to communicate. Correct.

What I've seen I've seen all these things with magnetic field therapy. So are these, big devices that I would be coming to your office. So I, I tried to douse my phone, but a message came through, not a call.

Okay, so there are degrees. There are there are some some devices that are about the size of cell cellphone. Well, okay, there are some devices that are, and it depends on the control unit.

So controlling it, it's going to be small. And what you're doing again with the magnetic fields, you're passing the current from the control unit. You're passing down a wire and to a coil. Yes.

Can be a size of a quarter. Or they could be the size of a whole body. Yeah, yeah, I saw you. And you can get systems that will give you that, range of choices in the same system.

You can have local treatment for like an elbow, a shoulder or back of the neck. Fact I use a P and F device, every night for sleep at three hertz, a delta delta frequency.

And I use it all night long and my pillow to help me with sleep. And it's small. It's portable, battery operated like a small cigaret box. And the coil itself is about that big.

Yeah. Are small amounts, about 2in to 3in. So you can go from that all the way up to devices that are like, Oh yeah. And explain cgms for people who may not know.

All right. So TMS stands for transcranial magnetic stimulation, which means the magnetic field is going through the brain right across the skull into the brain.

The TMS machines have a coil system that's like this big. They put them on the on a on the brain for depression. That's what they're approved for by the FDA.

Treatment resistant depression. Well, there is a lot more application than the FDA indication. Yeah, absolutely. And what they do with TMS for depression is that they're powerful enough to stimulate or generate current in the brain.

So they put the coils over the motor cortex, over the part of the brain that controls muscle movement, and they increase the intensity, the magnetic field in that spot until they get a handle and no portion.

But it's basically like a like a twitch. Yeah. Right. So that's called the motor threshold. And then they will take that threshold and never put the applicator on the front of the head.

And they'll go up to 120% and about 20% more than the motor threshold to stimulate, charge production in the brain. TMS was developed originally to replace ECT electroconvulsive therapy. Yeah, yeah.

Safer. You don't need a seizure and it has a lot of the same benefits. It may not be quite as powerful as ECT, but then it's not as barbaric either. Yeah, right.

So basically what you're doing then is you're stimulating the brain with this magnetic field. And now you can find you can treat Parkinson's, you can treat M. S., you treat let's say als you can treat brain injuries.

She did a review paper, published a review paper in the journal Science and Medicine on the use of TMS, but not TMS. That kind of TMS, but with other magnetic field therapy devices for TBI, for brain injuries.

And there's a pretty substantial literature showing a tremendous benefit of magnetic field therapy for brain injuries. So we're doing it for brain injury.

What's it doing for other problems like I mentioned, like parking. Sure, sure. Absolutely. So what are you using these small portable devices then for?

Ms.. Okay. So yeah, let's talk about what I would do for Ms.. Yeah. A part of the problem is what what is your Ms.. What are you experiencing with your Ms..

If you have somebody who's in a wheelchair already and is incontinent, basically, or bladder and gone as well, if you are at a more severe level, damage, right with their Ms..

Using PMFs for MS and Neurologic Conditions

Right. If you have somebody who just got some plaque and maybe had some optic neuritis, you don't need something quite as big or a strong. You can use that small little device to help, to help with sleep, but it's not strong enough because 200 to 200 goes.

Sure. What it does will deliver to 15 goes only in about half an inch. Okay, so that's going to be very far. Yeah very well. But for information management it's not going to be ideal.

So now also the time I want to be using devices that are more powerful. So you need to have a machine that's going to have probably a minimum of 4000 gauss to be able to treat transcranial.

And that's the goal you have to treat transcranial major. Yeah. Yeah. And you got your Mrs.. And you know where the lesions are. And, you know, in terms of symptoms where some of the problems are as well.

But MRI is going to guide you where you real lesions are, whether you have it in the neck or you have it at the thoracic spine. You know, most of them are going to be in the brain or in the in the neck, cervical spine early.

You don't see very often thoracic spine. But you know, they do happen to. Yeah absolutely. What you you can use it for training the brain you can use for treating the spine.

And if you get the right magnetic system, you can actually run two channels at a time where you could treat both simultaneously. Wow. And then that decreases treatment time.

And those devices that are vital. You know, again, you have two applicators that are running at the same time at

the same level of intensity, would get the best results the fastest.

So in other words, the total treatment time that's needed for that would be a lot less. Well, so are these commercially available in the United States?

So, in both of my books, Power Tools for Health and Supercharger Health and on my website, doctor Polycom, DARPA, Outlook.com, doctor, Qualcomm, doctor Qualcomm.

I have a product comparison guide for all the different devices that I've worked with, and I recommend and use. Yes. And then there's a store so you can go to the product comparison guide or the store on the website or in the books.

Again, they're charts of the different machines. Oh, this is excellent. And then so if someone get a device again, do they have to work with their treating physician to set these protocols up or.

Well, what do you think? Well, I'm thinking that people can probably set up the devices with a little bit of help, but the that's what. Yeah, that's what Doctor Polycom does.

The biggest problem for most people as they end up buying machines or equipment based on some salesperson selling them something. Yeah. And the salesperson doesn't even know what they got.

The salespeople don't even know the intensity of their machines. And I mentioned that you need a minimum 30 and Gauss, if you're going to treat transcranial, you need a minimum of 4000V.

So you need to get the right piece of equipment. And then if you do that then supercharge your health has protocols, has general recommendations for how you use the magnetic fields, has some supplement recommendations.

Anybody who works with Doctor Qualcomm we provide free consultations. We'll tell you what device will be best for you. We'll tell you how to use it. And then we provide you with ongoing support for for you to be able to get the most value out of your equipment.

It sounds really quite remarkable. Now, Bill, in addition to, because this site is for people with no immune conditions, I'm emergent when it people with showgrounds, with RSI, with the shirts, narrow sarcoidosis.

So a wide variety of autoimmune diseases that attack their eyes are their peripheral nerves or their cranial nerves or their brain. Are the brain directed?

What do you think? Would those people be helped as well? All of them. All of them. It has what? The common factor. Yes. And then I'm thinking like the diabetic neuropathy piece okay okay.

So but diabetic neuropathy is better actually than idiopathic neuropathy where you don't know if. Well the reason is that you don't know what the cause is.

So if you don't have cause then you know it's harder the symptoms. So diabetic neuropathy one of the most important things that have to do for that is they prove circulation to those nerves.

Yeah. Yeah. Absolutely. And in those issues so diabetic neuropathy responds really well. I have a, I have a picture of a relative actually, who had Charcot foot from diabetic neuropathy.

He was a type two diabetic, had for a very long time poor control. He started developing a charcoal foot, which means the bones are basically crumbling because the bones don't have adequate vascular supply due to this tiny little blood vessels that feed the bone.

So as phones, bone started sort of falling apart. He was under standardized group standard wound care for about

two years. Their OP was not getting better.

The wound was bad and oozing from the from the foot to bottom of the foot. He's seen podiatry, seen all kinds of wound care people. We got him on a portable, battery operated magnetic system.

Within one month. His foot went from this to this. Wow. Now here's another problem that I see people struggle with small chronic idiopathic demyelinating cidp.

You know, chronic idiopathic demyelinating palling around. Have you had any of those folks we asked? We've had a few of those. I did consultations on a few.

So I don't have a huge series. And they do better to the challenge that we have with nerves. Again, nerves don't heal. Well. Yes. Right. They take a long time to heal and people have to have the patience to continue their magnetic field therapy.

And let them let the nerves heal. But you can improve circulation, you can reduce pain, you can sleep. So a lot of functional improvements you can get with these individuals and don't directly cause the nerve to be normal tomorrow.

Correct.

Accessing Devices and Clinical Support

You know, if a nerve is regrowing from the brain all the way down to toe, believe I was recall something like seven years to make that path. I presume that this would facilitate a little faster recovery time.

Would that be correct? Yes, because one of the things that magnetic fields do is they increased Bdnf. Yes. Yes. And other nerve nerve growth factors so that you, and studies have been done in rats where they did sciatic nerve, the cut through transacted sciatic nerve and that did magnetic stimulation.

And it followed those nerves with know magnetic stimulation and found that they started getting sprouting. Okay. Excellent. Excellent. So we know we can recover.

The problem is getting them to reconnect properly. And does this have many assistance there. But, it takes too long. So the problem is that a lot of this research, the animals don't live long enough.

And, the research doesn't go on long enough. So what happens is that you often see people with numbness, and, you know, if you're numb, the nerves, almost the nerves are basically dead or pretty well, dead.

Yeah. Yeah. They're seizures. They start having numbness and tingling. They start going from numbness and tingling. That's a good sign. It's a good sign. So that means those nerves are recovering.

So there's a chance then over a period of months, typically months to even a couple of years with the regeneration processes of the nerves that you can get some reasonable recovery of the nerves hundred percent.

Well, I tell people I'm an MD, not a god. And even jewelry doesn't give you everything you want. Yeah, yeah. Good relationship with God. Yeah, yeah. Is absolutely helpful.

Well, this has been really very, very informative. I appreciate your taking the time to chat with us. Tell us again how people get to your website. Okay, so it's Doctor Pollack.

Okay. And, everyone listening, Doctor Paul is going to have, a gift, free. Be sure and download that. You'll get some great, great info. And, Bill, thank you so much.

I've used PMF for many years. And yes, that certainly has been a very helpful tool. Much love to you and your

family, and I look forward to seeing you hopefully at a, another a forum conference.

Wish you very great success with yourself. Thanks, Bill.