PEMF: Your Tool For Enhanced Sleep Quality Transcript

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Introduction to PEMF Therapy

Hello again. It's Dr. Wells from the Sleep Deep Summit. New Approaches To Beating Sleep Apnea And Insomnia. I'm really excited about the next interview because we're going to talk to Dr. Bill Pawluk He is a holistic physician and he has developed the pulse electromagnetic field therapy.

He has a device and we're going to do a little show and tell today. We're going to talk about who this treatment is for and who should use caution when deciding about whether this treatment is usable for them.

And we're going to discuss all kinds of things related to this very exciting treatment, which you may not have heard about. So with that, welcome, Dr. Pawluk It's great to have you here.

Thank you, Dr. Wells, Audrey You're very welcome. I look forward to our discussion. I want to start out with the basics and just get you to explain what pulse electromagnetic field therapy is and what it isn't.

And I just like to connect the dots for people. Exactly how does this work? Okay. So essentially what everybody's heard about and a lot of people are concerned about, of course, is 5G or 10G or all the other G's with that are in the environment.

And we call those EMFs and electromagnetic fields. I call them environmental magnetic fields. So they are. And they're in the environment and environment.

I'm sorry to interrupt, but is g for gauss? Is that that measure? Okay, good. I'm glad. Clarify it. Thank you. That's very important, actually. No, it has to do with a generation.

So it's fifth generation, eighth generation, 10th generation. And so it's the basically the signal from, say, cell phones or microwave towers, primarily for communication, wi fi and cell phones.

So 5G is essentially broadcast from the microwave fields to communicate with your cell phone or to communicate with your router in the house, etc.. All of that is basically broadcast in the environment, just like radio waves, just like television waves, just like radar.

It goes out into the environment and it's directed out into the environment now, maybe 360, but it's basically directed out and it just goes on forever, essentially until it drops off.

Infinitesimally small numbers. So that's designed for a whole different purpose. Okay. But it can affect the body. Now everybody's afraid because it's EMF versus PEMF, which is what we're working with, pulsed electromagnetic fields.

So EMF, the difference is that EMF is high frequency.

How Pulsed Magnetic Fields Work

I frequency is absorbed by the body. That's the principle behind a microwave oven, right? It's microwaves that are being absorbed into whatever you put into the oven and it cooks it.

So it's cooking it from the inside out through a heating mechanism because of the degree of absorption of the microwave. PEMFs are designed in a very different way.

So they're designed for human use. So they're designed by virtue of taking a current and passing it through wires. We'll go back to the example that we're going to talk about.

So this is a machine for the sleep. This machine that produces a current, that current goes through this wire and basically goes into these coils at the end of the wire, copper coils and that current flowing into those coils that produces a magnetic field.

And you apply the magnetic field against the body or the brain or wherever else you want it for sleep, and it goes into the body. Now, this current flowing in here basically is flowing, say, my thumb is the current direction.

So every time the current pulses, a magnetic field gets produced that's perpendicular to the flow of the current, always perpendicular, but because it pulses, that means that current is flowing out and back down.

It collapses back on itself. So as the pulse goes up, the current, the magnetic field goes up. But then as as a current pulse dips, drops off, then the field collapses.

So this field is basically going in and out, but it's a closed loop because it's completely tied to the wire and the and the energy flowing to that wire.

So it's designed for for human use, understanding the principles of magnetic fields into the body. Now, microwaves, to the extent they penetrate the body, they produce similar sorts of actions at the cellular level.

The major difference is that because they're microwaves, they're absorbed in the heat, they cause heating, therapeutic magnetic fields don't cause any eating.

And there's always been a there's been a debate among scientists. How could they possibly work on biology if they're below a thermal level? It's below the noise level of producing heat in the body.

Then it can't be infected. But that's clearly been ruled out and established that magnetic fields that are not heating still have significant biological effects, Can you talk about some of those effects?

So what I'm understanding so far is that the magnetic field is generated here at the coil and it goes out perpendicular, and then when the pulse ends, it dissipates back.

So this is the pulse. Doing it. Right? That's the pulse. And it's the strongest at the coils. So this this follows the basic principle that we see in life in general, that light and heat and cold and sound dissipate very rapidly from the source.

In medicine, we actually use that principle. It's called the inverse square law to calculate a dose of radiation. If you had to do radiation into the body, you have to calculate the dose at the depth you're trying to treat.

Right? So right at the source of the radiation you don't need as much radiation because it's much more powerful. But as you get farther, farther and farther away from the source, as you get deeper into the body or across the brain or into a lung or into a kidney or valley, then you have to calculate the dose.

So the dose of this 200 gauss, which is what these are gauss, is the measure of magnetic field. That has is G-A-U-S-S a scientific term for it is Tesla or Milli Tesla your thousandth of a Tesla.

So that principle then is not as well known in physics as used in medicine. So by the time 200 Gauss is about an inch away, you basically drop down to maybe 0.2 gauss.

Mm hmm. A logarithmic drop. So it's a logarithmic. Very sharp drop. Mm hmm. So then it's not harmful at all. Got it. It's not that it's harmful at all.

It's not harmful anyway, because of this very low frequency. And it goes into the body. It passes through the body as if the body wasn't even there because it just passes in and out.

And what is the frequency of the pulse? All right. So they vary from device to device depending on the devices that

you're using. So, for example, an MRI machine, which is a magnetic machine as well, writes magnetic resonance imaging.

So an MRI machine, which people are very familiar with, is has what's called a static magnetic field and what's called a radio frequency field. So the radio frequency field is moving is the motion static field is just there.

It's like a fridge magnet. It's just a very powerful fridge magnet. All right. So that's static. And the MRI uses both the combination of the two. So they they have the same principle of dropping off the energy, and they will have similar sorts of actions in the body to some extent.

But be able to memorize or pay attention to the therapeutic effects. They pay attention to the diagnostic aspects of it. So the magnetic field then as it passes into the body, it's like the wind in the trees. Think of it that way.

It's like the wind in the trees. You don't know the wind's there unless you see the leaves moving. Hmm. That's what you tell that there's action. So as it passes through, it's going to start moving ions and start going to move tissue, not tissues, but fluids in some to some extent, inside the body.

That movement then is interacting with a basic principle of physics called Faraday's law law of induction. So what happens is, as you move a current or if you move a magnetic field past anything that has current in it, or this chart has a charge to it, then you're increasing the flow of charge.

Mm hmm. Faraday, who discovered this back in the 1800s, took a lightbulb and put it in a circuit. A wire circuit in a loop. A wire loop? He didn't have any current flowing in there, but it had a magnetic field and it pulsed the magnetic field past the wire, not light bulb, but past the wire.

And the light bulb would light up. Mm hmm. That's because you're inducing charge, reducing energy current, essentially, in anything that's inducible. And so ions, calcium, magnesium, all the ions in our bodies, all the electrolytes that are in our bodies, any molecule that has a charge to it, and which molecule in the body doesn't have a charge to it.

And there would be none. I mean, there's nothing. Yeah. Anything with a cell wall is going to have a polarization. Exactly. Yeah. So. So what are these meant to do? Exactly?

What are the application applications of the PEMF devices? So this particular device was designed primarily for stimulating the brain.

Safety, Implants, and Device Placement

It could actually be used for a tennis elbow or shoulder problem, if not very strong, to do anything really good there. But it can sometimes decrease pain.

So it could be useful for pain by itself. It could be useful for inflammation. It could be useful for a bug bite. It could be useful for a dental problem.

I do have people who use a similar device, not this frequency, similar device for their eyes. So trading around the eyes will get on your sinuses and it will get your eyes as well at this device.

Could be used for that, too. I don't it's not designed for that specifically, but there's no harm in using it for that. What it might do, though, is put you to sleep.

And that's a good thing for a lot of people who struggle. With decided that's probably not a good idea. Right. Right. Well, you know, presumably the folks watching our interview today have some sort of sleep condition.

And I'm glad that you brought up sleep as a potential application for these devices. But I want to address something straight off about the implantable devices that you mentioned.

So some people with sleep apnea elect to pursue treatment with a hypo glass old nerve stimulator device. Currently the one on the market is called Inspire.

So it's an implanted device in the upper chest. They implant it on the right so that the left side is reserved for a pacemaker should you ever need that.

And then there's an electrode that is sort of fed up through the neck and into the base of the tongue where the hypoglycemia sits and produces that forward movement of the tongue during sleep to help keep an open airway.

So I'm curious to know, is this type of implantable device or others a contraindication for using a PMA device in general? And we work with people with pacemakers, but we work with other machines that if you're using this to the head, to the brain, for example, for sleep, then it's far enough away, most likely that it's not going to cause any significant change or problem where you can run into a problem potentially would be that if the coils move away from your head down into your chest area where the pacemaker is or the the ASPIRE is, the control unit is it's a possibility that a greater fear.

However, most of these devices that are implanted today these days 20 years ago different story but in the last four or five years, they have become what are called m are conditional.

Mm hmm. So because it's more conditional, that means that that machine can can tolerate 15,000 gauss. We're talking about 200 maximum. Got it. So I would generally say it's it's not going to usually be a problem.

And and I think that's an important reminder for anybody who does have the implantable inspired device. You know, it's only sort of recently that it has become acceptable to use the implant in an MRI machine up to 1.5 Tesla.

But the device itself is not able you're not able to have an MRI with 3.0 Tesla. Now, I tried this device and thank you very much for sending me the sample.

So I have the device which I tried at home. And I want to start off by saying that I am a kind of DIY person. I like to get my hands on CPAP masks on the best bed sheets, which are really fun and all the kind of devices that are meant to improve sleep to see is there any improvement, to find out if it works, and also to confirm that there's no detriment or problem with the device itself.

So I used the cover that was provided in the kit and I put the coils inside that and then I positioned it on my pillow. Now I'm a back sleeper. That's the best way to avoid wrinkles for anybody who's keeping score at home.

That's very good for sleep apnea. And that the coils were sort of at the base of my skull. I did notice that when I was moving during sleep, the coils would sort of move with me.

And at times it was just kind of working its way around the pillow or coming away from my head. What sort of things do you suggest to keep that application in where it's meant to be directed?

Even though you're moving unconsciously during your sleep. You have it inside on top of the pillow. Inside the pillow cover. Right. I didn't put it inside the pillow cover, but I know I thought of that.

And I also thought of like pinning it or somehow, you know, making it more stable. You could do that. I usually recommend putting it on top of the pillow.

Inside the pillow cover inside. Got it. So that means your head, as you move your head around, is not going to really move it a whole lot. It'll stay pretty well in place.

Yeah, that little pouch is. It's like a velvet feel to it. It does that to have a little bit of resistance to even silk sheets. I can do that. Yeah. Pillowcases.

So the other aspect of this, this is actually called a audio magnetic entrainment device. So the name actually is

called the X Pulsar Deep Sleep Tuner.

So a deep sleep AMG tuner, so deep is actually it capital letters. It starts with Delta enhanced entrainment program, right. So it's an it is Delta enhanced.

Now we're trying to enhance Delta in your brain and it it trains the brain. It causes the brain to listen to it, and the brain's frequencies begin to go quiet.

So that's how that's how this was designed. And then you put it on your pillow cover inside the pillow, the audio from this is part of the treatment. So it's audio magnetic entrainment and we have audio visual entrainment, we have audio entrainment, we have visual entrainment, all kinds of entrainment out there that's available.

So we're this is audio magnetic, it's unique audio magnetic. So that means that your brain is getting that magnetic field. But at the same time, you're hearing the sound, the clicking and the clicking sound is at a very, very slow pace, which is at the same rate as your delta waves in your brain.

I wonder if we could demonstrate that I'll turn on the device. Or maybe you can. I may let the battery run low, but I do remember hearing a tick, tick, tick, tick, tick, tick, tick, tick.

A little tiny noise coming from the device. But I don't know if the speaker could pick it up. I'd need an amplifier. But as you say, it's a tick, tick, tick, tick, tick, tick, tick, tick, tick, tick, tick, tick, tick, tick, tick, tick, tick, tick.

There's three pulses per second. Mm. So it's relatively fast, faster than I'm speaking. And so that you're hearing especially at night when you don't have other sound but you have your head on your pillow, you're going to hear it.

Yeah. Benefit then not only the audio part of this but also the magnetic field component of it. Got it. And what sort of results should one expect if they're using this?

And again, I just want to confirm it is meant to go at the base of the brain. Is that. Well, actually, you could put it anywhere you want. You want it you want to be able to hear it at least.

So the value of putting it on your pillow is that you're going to center your head over it. You'll hear the sound you may not feel. The magnetic field people are very sensitive, may actually feel a little sort of field moving in and out of their brains.

But it's barely, barely noticeable because it's not that high in intensity. It's a whisper in a sense, coaxing your brain just gently coaxing your brain into these frequencies so that that's all you're going to feel.

If you the audio helps you to orient your head to the magnetic field as you lay on it, you hear it. And the good thing is that once you get the entrainment going, when you first lay down, you have your heart rate over.

You can hear the sound louder, loudly. Then the brain starts to get in trained. As you move away from it, you hear the sound less and less.

Sleep Study Results and Real-World Use

So what you do subconsciously is you begin to move back over the coil that that then engages both the audio portion of that and the magnetic field portion of that.

And so during the night you're going to be moving around, but you're always going to find yourself drifting back to your that's going to be your anchor, the sound.

And that keeps the entrainment going once you've been trained, even if you move farther away from it, you're still going to be, in a sense, captured by the the signal.

The way I usually describe this is like an analog radio dial. I don't people who are listening I ever did analog radio. I know exactly what you're talking about.

And we're both dating ourselves now. We are, but I'll explain it anyway. So when you have an analog dial, unlike our current radios, they have a signal, specific signal at every channel and you can tune the channel.

You go back to that particular frequency. So what it does is it sets it at a specific frequency, and that's the frequency of the radio station or the TV station.

So what we are doing when you add or you're moving from one frequency to another and as you're coming into the frequency that in this case it's three hertz, as you're coming into that frequency, you start to hear static because now you're picking up some of the frequency of the edges of it.

And as you start to get close to the actual frequency that you're looking for, it becomes quite loud, very sharp, very clear, very distinct. So you our brains are tuners effectively.

You could also say that brains are transmitters, but we won't get into that. So our brains are tuners. And so when you present the brain with a signal tuning it to that region of the brain, to that particular frequency and kind of lock it in, and once you lock in that radio signal it gets loud.

How is it you're lock it in is clear now, but also at the same time it starts to get a little bit louder because that now you're locked in and it's not shifting or changing and the electronics is able to capture and keep that signal.

So the brain is doing effectively the same thing. And who is going to benefit from this type of therapy? Well, it's primarily designed for sleep, and it may be able to be helpful for other problems locally.

But we do have to be careful again, driving that. You're doing this on the body. That frequency is going to be in your body and it can end up going to your brain to some extent, but it can slow down for particular sensitive people may slow down the rate to act so don't use it while you're driving are doing operating dangerous equipment right otherwise basically anybody who has a sleep issue, anybody who has anxiety so you're going to be used during the day even for anxiety purposes.

But by doing it at the base of the brain, at a base of the brain is the reticular activating system. So that's our alertness system in our brain. There's other aspects of it in the brain, too.

But this is a this is the most basic one. So putting the two cores at the back of the brain, which is also, by the way, isn't it the same area that you would use to stimulate the vagal nerve complex at the base of the brain?

Yes, but I would have a hard time putting that together with the the pulse, the electromagnetic field. Yeah. So the VNS is also getting stimulated at the same time.

Okay. And, and so this would be to promote sleep. This would be for someone who was struggling to get to sleep or struggling to stay asleep. Are both correct.

So the value of this system, it was designed to be run on a batteries going. A rechargeable battery is designed to be run all night. So we actually did a study with 1917 people and we had them do the treatments for five, seven days as a control.

And then they did 28 days for weeks with a sleep diary system. So we used the National Operation National Health Service, Sleep Diary. They did that for seven days before they actually did the actual therapy.

So we got a baseline, a seven day baseline, and then they did it for a whole month and we recorded the results. What we found is that the quality of sleep improved by 25% in these 17 people.

The number of times that they were waking up during the night decreased by 2020 6%. And people who had sleep

problems to start with. So who we recruited for the study was people who wanted to have a treatment for sleep.

So we didn't take healthy people here. Healthy people. And we'll we'll do this to see what happens to your brain. So healthy people, we may not notice a whole lot of benefit for them.

In this case, we were treating people with sleep issues and many of them were actually taking all kinds of sleep supplements. So that created an issue for us because we did not have the variability that you would normally look at because they're already taking something to help them with sleep.

But they wanted this therapy for sleep because it wasn't working well enough. All right. So we're adding this on top of whatever else they were doing, obviously is going to work very well on its own anyway.

But if you adding it to other things, that's okay too. So we had a significant improvement. The amount of sleep improved by 10%, the time it took to fall asleep improved by 34%, but the quality of sleep improved by 25%.

That was statistically significant even for this small group of people. I'm curious to know how you measure the quality of sleep. It's part of the scale.

There's actually a question about quality of sleep. So people rated their quality of sleep from 0 to 5, I think. I see. Okay. And did you. Use objective measures?

We want to keep it simple and easy to do. I tried to we looked at doing clefts. MCGUFFEY Different kinds of objective testing for sleep is way too complicated.

You have to almost use a sleep lab to get the best results and all our rings can be helpful, but they're not reliable. Right? Right. I'm wondering, too, if there was a placebo arm of your study where people were having a device, but it was inactive or maybe just producing the sound and not the right.

We had the control phase. Tell me about. That. So we were the control phase was they did that. They did diaries for seven days before we actually started using the machine.

So that's our control phase. And the reason for that is that we want to be able to do enter a person is the person is their own control. They're the ones with the sleep problems.

So we wanted to see what they were doing even before they began, they were already taking some supplements first. We already know that that would be quantified in the control phase and then they did the active treatment phase and we didn't have a third phase where we stopped it after that and followed up after that.

So still with what with that difference between the control phase or the active phase, we found a 25% improvement in quality of sleep based on their own assessment of the quality of sleep.

Got it. Okay. And what other studies are sort of in the pipeline to look at this further at 17 people? I realize that could be a lot of data to pull in, but are you planning bigger studies or crossover designs, anything like that?

I think at this point, I personally, I don't feel we have anything to prove. We're not doing this for research purposes. We're not doing it for the science.

Right. We're not really even looking for trying to get it approved by the FDA as a sleep, as an insomnia therapy. Right. So this is basically a wellness tool.

And with this data, it's reasonable enough. Again, we might eventually we probably that how do you fund research. And through grants oftentimes. Right.

That's a lot of work. And again, is it what difference does it really make? It may make doctors happier. It may make the scientists happier. But does it really make the consumer that much happier?

Not really. So I'm wondering if someone were to try this device to improve their sleep, how long would it take for them to see. A market. Improvement in getting to sleep or staying asleep?

Good question. We used another measure called pro patient reported outcomes called outcome MD. So we had another difference, a different measuring system completely.

And they would they got surveys on a regular basis and even with that system we found significant improvements. But we did see we did see different patterns.

Some people got improvement immediately within the first night. Some people ramped up over three or four days a week. They went from a baseline test score that was lower.

That was in the control phase. And then our secondary score down down the road, usually about a week away. So those tests were done typically a week apart, the outcome, empty measures.

So we found some people who got better right away. Some people ramped up with their benefit and other people had life happy. Right. So if somebody somebody got a divorce, somebody had a car accident, somebody had a death in the family.

What were you doing? A month long study. You're going to have life happening, right? And that kind of throws everything off to be able to do that. So that study, even though that those situations did happen in those 17 people over that month, we have people who had sleep partners changing during that time where people had dogs sleeping in their beds.

Pain, Anxiety, and Other Applications

I saw all this natural stuff that happens to people with their sleeping patterns and we still found that a significant benefit. So I'm actually surprised how much benefit people got considering all those other things were happening as well.

Yeah, it's like a real world experiment. Exactly. So a real world. Humans are multifactorial, that's for sure. I'm curious to know if this is something that you use for your sleep.

Absolutely. I use it every night. And and what do you notice if you took a break? Like what sort of detriments would come up if you were without your mouth?

I've done that a few times and it clearly makes a difference. I can tell it's it's fairly significant. So I have the reason I use it is because I have my own sleep issues.

I don't have trouble typically falling asleep, but I had trouble staying asleep and I am a little older, so I may have some bladder issues. Or if you have a partner who snores or if you're bumping into each other during the night, I don't have a king size bed.

It can stay away from anybody right? So there's all the practical stuff of sleeping. So I do notice a difference where I don't or if I'm laying during the night and I'm sleeping and I'm aware of I'm not aware that I'm sleeping because if you're aware, you're sleeping.

You're not sleeping. That's true. Right? So all of a sudden I'm noticing I'm awake or am I aware? Then I do as I orient myself back on the magnet and usually come right back.

And you go back to sleep. Yeah, I think that's one of the bigger problems that I help people with is going back to sleep because you've already eliminated some of your sleep need and so you're not as hungry for it.

It can be a real challenge to get back to sleep. And the brain does not shift to change that fast. It can if you use a very powerful magnetic field, you can shift the brain almost in a second or a few seconds.

We're usually a very gentle magnetic system, so it takes a while to ramp up a ramp down in our case of sleeping. But then you maintain the benefit. So if you stop the treatment, you're still going to maintain that benefit for a while afterwards.

You get up during that. My point is that if you get up during the night and you been sleeping using this for sleep, you're sleeping well. But you get up to go to the bathroom and we come back to bed.

Put your head right back where the magnet is and put your right there. And you haven't lost the full benefit of the entrainment that you've already been doing.

I see. I want to ask you, too, about another application for your EMF devices, which is pain. And in my world, pain often competes with sleep. Now a person may have pain when they first lay down to go to sleep, and that may cause trouble with getting to sleep.

But also, if you're not able to move in bed well or you have joint pain or muscle stiffening as you're sleeping, that all by itself can interfere with sleep quality.

So I'm wondering if you can talk about some of the other applications, including pain of your posture, like electromagnetic field device. All right. So let's deal with the person who's sleeping with pain.

Mm hmm. Or the person who's sleeping who has the urge to go to the bathroom four times a night. Right. So whatever is disturbing your sleep. Magnetic field therapy because of the Delta State Hydro, you probably can do a better job of describing what the Delta State is of the brain.

I know it's the deep sleep state, but it's a very slow sleep state. And so what it does to awareness, what it does to the perception of sensations in the body, is it significantly decreases those perceptions.

So you're quieter, you're competing with the pain in the sense the pain signals come into the brain. It's registering in the thalamus, hypothalamus and the limbic system and so on.

So if you if all of that's just were quieted down, it takes a bigger stimulus to be perceived by the brain, so it takes a stronger pain. So it doesn't eliminate the urge to go to the bathroom.

But what's going to happen is you're going to fill the bladder more before you get a strong enough urge to say, okay, I got to get up. The same thing would happen with pain.

So you're perceiving less now beyond the sleep time, the time of sleep. You can use this device as well over any part of the body that's got pain. But because it's weak, relatively weak, it's not going to be as effective for, say, a hip problem or a back problem.

But I can tell you right now, I use the device like this. This is modeled of another off, another machine that has other uses for it. And I would be drive to a lake house and it was three, three hour drive.

I have sciatica. So along the way I would get this pain in my back and I don't want to stop. So what do I do? Before I started traveling, I put this on my back or back.

Actually, I put it right over the disk where the problem stems from. And no problem, I would drive 3 hours, £0. Wow, that's great. Right? So this is strong enough to do that.

But as I mentioned, I wouldn't use this machine for driving for pain while you're driving because the frequencies will cause your brain to relax too much and you become less aware that you should be.

And there are machines like this that are could be used that way, that we have a device on Dr. Polycom called the Micro Pulse 89, which is designed primarily for pain or for musculoskeletal use.

With this particular device for sleep, also be applicable for headache or neck tension. Yes, I used you could use this one for that purpose as well. I had a patient in the office who was extraordinarily anxious.

We had an hour appointment. She sat down and she was like fidgeting and moving and she was just like, Really? You can see she's tense. So I said, This is not going to go anywhere.

It's not going to work. So what I did is I put the coils on the back of her neck, the base of the skull. That was the machine I was using for that purpose was seven hertz.

So this could this will get you down to seven, actually below seven or eight. So this can be used for anxiety as well. Literally in her shoe you kept pacing, but she was the treatment was working so literally within about 5 minutes, you could see the elevator going down.

Got it. You see the anxiety level just dropping. Fine. So about 10 minutes later, she sat down. We finished the interview. Yeah. So it could be used for that.

Don't use it while you're driving or operating machinery. Yeah, I think that's a really important thing to underscore because, you know, the truth is when you try something new, whether it's a device like this, a pill or a new routine, there's always the potential that something untoward could happen.

So certainly give caution to that. Back to the pain question, though, Audrey. Yes, this can be used for pain. So this could be used for chronic pain brain.

So people will see rrps if you don't mind relaxing or chilling out that you could use this during the day as well. So for headaches or I, I would I could use it for mscs.

I could use for anxiety, agitation. It could be useful for a child with ADHD. That's motors revving too fast or ADHD. So it could be. But again, remember that you have to do it at a at a place at time that is not going to interfere with function.

That makes total sense. And I think that is a nice word of caution. Again, for someone who's trying something new in their life. The risk is very low, extremely low.

Is there anything else that you'd like to discuss before we close today? And I think this has been a really illuminating discussion of the potential for these PEMF devices.

Is there anything you want to highlight? Well, a couple other things. We started a little bit about what magnetic fields do. So besides it and training the brain, slowing down the brain waves, magnetic field therapy increases circulation to the brain, it decreases muscle spasms.

So if you have a headache, that's due to the muscles in the back of your neck being in spasm, it could help with that. It improves circulation, improves energy level.

So brain fog may be able to improve. But again, this is going to quiet your brain down. If you have brain fog, you don't want to be quieting down. You want to be getting more more active activity.

So magnetic fields have a lot of device, a lot of actions, a lot of that's covered in my book, Supercharge Your Health with PEMF therapy. So want to learn more about this?

That's probably the best place to go otherwise, if you don't mind that. Doing a very deep, long dive. drpawluk.com has a huge amount of information and there's a separate website for the xpulser It's called xpulser.com So I learn more about this.

You can go to that that website itself. It seems that there's somewhat of a choice.

Resources and Broader PEMF Uses

Am I right about which sort of device is appropriate for the situation? Would people be able to access help with that choice on your website or how does that work?

The book Power Tools for Health oh sorry. The book Supercharge Your Health helps you with choices because we're primarily talking about sleep. This is probably all you really need.

However, if you have a machine that you're using for other purposes, a pump machine for pain or back pain, for example, or hip pain or cancer or autoimmune diseases, often they can help with sleep too.

So if you're doing a treatment at the end of the day before you go to bed, they can relax or chill the nervous system in general because they increase endorphins, they increase encephalitis, they increase dopamine.

So because they're increasing all of these neurotransmitters, you can get a benefit of sleep. Personally, when I lay on a whole body pad for body treatment, I have a hard time concentrating.

I can't read. I just give up trying to read. I see. Because you feel so activated. Feel so relaxed. Yes. So right. So they can help with sleep, too. But they're not as they're not developed for this purpose.

This is the X Pulser is developed for this purpose. So PEMF chemotherapy can be very relaxing in general anyway, there are some people because magnetic field therapy also increases ATP production.

ATP is like having a cup of coffee, right? So if you increase your ATP, you just going to have more energy in the brain or energy in the body, and that can make you alert when you try to go to bed, you know, that happens that you need to do it.

Earlier in the evening. It seems like there is a PEMF device for all of the things you might need around the clock. In the Supercharge Your Health. book, there are 80 different health conditions.

I describe that magnetic fields to be used for. Excellent. Well, Dr. Pawluk, it's been a great discussion today. I love bringing up a new therapy that people might try for their sleep problems.

Again, getting to sleep, staying asleep or both. The xpulser may be something that you put on your radar for for relief. You've got the Power Tools for Health Book.

You've got Supercharge Your health with PEMF Therapy and people can find you at drpawluk.com drpawluk.com, right. Fantastic pleasure to see you today.

And I wish you well. And thanks again for letting me try out this device for myself. May you sleep better. I know you don't have any problems with sleep, so you're not, you know, but maybe your kids might.

Oh, by the way, we didn't talk about kids. This would be fantastic for new parents. For for the parents to use or the kids. The kid put it under under the pillow or on top inside the sheet that they're laying on.

And this may be good enough to keep the kids sleeping better during the night. So children with colic, for example, probably would get a lot of benefit.

This at the kids are getting benefit. The parents are getting benefit. I agree with that. Pleasure to see you today, Dr. Pawluk Thank you. Audrey. Take care.

Bye bye.