



## **PEMF Therapy Has Many Benefits In The Setting Of Menopause**

Dr. Sharon Stills interviewing  
**William Pawluk, MD, MSc**



### **Dr. Sharon Stills**

Hi, everyone. Welcome back to Mastering the Menopause Transition Summit. I am your host, Dr. Sharon Stills, excited to be here with you all and excited for the talk we're gonna have today, because we're gonna be talking all about PEMF, which you may or may not know what that is. And if you do know what it is, you might not realize how important it is for you as a woman during your hormonal journey to be partaking in PEMF and learning about it. So I couldn't think of anyone better than the PEMF guru himself, Dr. Pawluk, to come share his knowledge with us and get us all educated today. He's a holistic doctor located near Baltimore, Maryland. He's held academic positions at John Hopkins and University of Medicine. He is considered to be the foremost authority on the use of pulsed electromagnetic field therapy in North America. So I told you I would get you the best. And he's very interested in holistic pain management. He has been doing this for a long time. He's been on The Dr. Oz Show. He's been interviewed on Ben Greenfield's podcast and Dave Asprey's podcast, and so he has gotten around. He is very well regarded, and I've got him here for you all today. So welcome to the summit.

### **William Pawluk, MD, MSc**

Thank you very much, Sharon. I appreciate that. I look forward to having our conversation, our chat.

### **Dr. Sharon Stills**

Yes, me, too. Me, too. We met briefly in, I dunno, a few months ago, when we were in Florida and I got to have a quick taste of your medicine and loved it. And so I'm excited to



bring this to the listeners and just delve in. And so I always like to start with, how did you get so interested in PEMF? Did it find you? Did you go looking for it? How did that happen?

**William Pawluk, MD, MSc**

Both. I went looking for it, but it also found me. So sort of the genesis of it was, as a family physician and I was a medical director of a group of family physicians, basically. And we used to round in the hospital to share patients all the time. So in a very short period of time, we had two patients who almost died from GI bleeding, gastric bleeding, and that was due to ibuprofen. But I said, you know, what we're doing is we're almost killing people, if not actually killing people, for their pain management, using ibuprofen or non-steroidal anti-inflammatories. And I said, well, that's bad medicine. That's insanity, right? Doing the same thing over and over again, hoping for no bad results.

**Dr. Sharon Stills**

Exactly.

**William Pawluk, MD, MSc**

Right, so I decided to study acupuncture, but I did acupuncture that was 1990 and people didn't want needles at that time. They didn't know what acupuncture was. So I said, how can I do acupuncture-like treatments without using needles? And then I discovered that in the Orient they were using magnets on acupuncture points. Well, it turns out you can do all sorts of ways of stimulating acupuncture points, including pressure and heat and color and light and sound and so on. You know, the list goes on. So I started using magnets and discovered they were doing other things. They were doing more than just stimulating the acupuncture points. I'll give you an example. I had a spider bite on my leg. I didn't even know. I didn't even feel it, actually. I looked down on my leg and I had this big quarter-size welt. As a family physician, I knew exactly what it was. So I put a big magnet on it and taped it onto my leg. And I was doing some reading on my deck, and I looked down about an hour later, an hour and a half later, gone.

**Dr. Sharon Stills**

Wow.



**William Pawluk, MD, MSc**

How long does it take for a spider bite to go away?

**Dr. Sharon Stills**

Longer than an hour and a half.

**William Pawluk, MD, MSc**

A week, potentially, right? So I got it at the right time and the magnet healed the spider bite. That's not an acupuncture effect. So I said, what is going on here? So I began to dig into it, discovered that a lot of the science was actually in Russian or Cyrillic or in the Orient. So very little of that information was actually in the West. So if you go to pubmed and so on, you could hardly find these things or they're in foreign language and just have an abstract, a two-line abstract. Anyway, eventually I ended up meeting a Dr. Jerabek, who had an MD/PhD in magnetic field therapies. And so he had translated a lot of that European science. Wow.

So finally I got my hands on some science about PEMF therapies. And so we collaborated and published a book called "Magnetic Field Therapy in Eastern Europe, a Review of 30 Years of Research." So that's, now, 20 years ago, that was 30 years of research, 20 years ago. Right, so anyway, that opened the door, like, completely blew open the doors about magnetic field therapy and all the different things that it did because the book actually went into mechanisms as well. And so it was the first time I discovered some of the main actions of PEMFs. So from there, basically, I started acquiring magnetic devices of different kinds. I stopped just doing the acupuncture kind of stimulation. And now the whole world opened up in terms of the different organ systems that you could treat with PEMF therapies. And that's where we are today. So I've been working with magnetic field therapies for about 30 years now.

**Dr. Sharon Stills**

Mmm, we meant it when we said North America's foremost authority. That is a lot of time. It's funny because my first introduction of PEMF also was over when I was at the clinic that I used to work with in Switzerland a lot. And they were doing PEMF and I was like, ooh, this is interesting. We weren't hearing about it over here in the States. So I wanna get to the mechanism of actions, but before we go there, just maybe can you just



define, for those that don't know, because it's not very well heard of here, like, what is PEMF? What does it mean? What does it mean to the listeners?

**William Pawluk, MD, MSc**

So PEMF therapy is, basically, it's using magnetic fields, but it's a very specific kind of magnetic field that is pulsed. So there are two kinds of basic magnetic fields. One is static and one is dynamic or active or pulsed. So a static magnetic field is a magnet. We all have some familiarity with magnets. So you take it, like I did with my leg, I took a magnet and I put it on my wound, all right, and it clearly worked. So that's static. It's not moving, right? Once you created the magnet, it's just basically there, permanently. Pulsed magnetic fields, on the other hand, are created by current flowing through a wire. And that follows laws of physics, having to do with electro and magnetic, electricity and magnetic.

So wherever you have current flowing in a wire, you have a perpendicular magnetic field flowing around that current, and we call that the right hand rule. So this is the current, the line of current. And then this is the magnetic field. So every time current flows, magnetic field pops up and comes back. Now, this is a big difference between static magnets and electromagnetics, but they're dynamic. They're in motion. Now, a static magnet, when you put it on the body, it relies on the body's natural motions, like the flow of blood, the flow of nerves, the flow of electrolytes and so on in the body. So it's very, it's passive, it's a much more passive process. PEMF therapy, as you can imagine, as you can see, basically is very dynamic. And then the next big question, and I'll get this elephant out of the room right now. Aren't these EMFs?

**Dr. Sharon Stills**

PEMF.

**William Pawluk, MD, MSc**

It is. PEMF. So it's EMF. So EMFs is electromagnetic fields, but I define EMFs as environmental magnetic fields. Another way of defining that term, but basically it's electromagnetics, but it's in the environment. So environmental magnetic fields are what we call open loop. They get blasted into the environment, they're open. They just keep going into the environment. The example I gave you with the current flowing in the wire, that's a closed loop. So the magnetic field goes out, it comes right back down on



itself. It's a collapsing field. Expands and collapses, expands and collapses. So EMFs are blasted and because they're blasted and, particularly, they're designed primarily for communication purposes, right, or defense purposes, like radar, or communication, again, radio waves, television waves, they're all communication, basically, devices. And then of course, microwaves in cell phones and cell towers. Those are microwaves. So they're designed for communication. They're not designed for therapy and they don't really, in a sense, care about the bodies that get in the way. Right, so EMFs in the environment are basically, because they're high frequency, like microwaves, are like a microwave oven. They cook. So if you see somebody's ear after they've talked on the cell phone for a while, it's bright red, right? And the opposite ear is slightly red, but not as bright. So clearly before you did the cell phone to the ear, it was not bright red. It's like my ears are now, just natural color. Why do they turn bright red? Because these high frequency fields have very short wavelengths. And as a result, they get absorbed into the tissue. And when they absorb into the tissue, they create heating, and that's where the harm comes from. Right, so the more of that exposure you get, then the more risk of harm there is to you.

**Dr. Sharon Stills**

I just did-

**William Pawluk, MD, MSc**

And, of course-

**Dr. Sharon Stills**

I just finished my talk for the summit on toxins. And I was talking all about EMFs and how toxic they are, and about not putting your phone up to your ear, and all of those things, so...

**William Pawluk, MD, MSc**

Oh, never, never do that.

**Dr. Sharon Stills**

So apples and oranges.



**William Pawluk, MD, MSc**

And it's your ear, what's in your ear.

**Dr. Sharon Stills**

PEMF heals, EMFs do not. So, yeah.

**William Pawluk, MD, MSc**

Well, we know that acoustic neuromas develop on the side of the head you tend to have your phone to, so the more time you spend with your phone to your ear, then the more likely you're gonna have a problem. So you should always use earbuds or use voice.

**Dr. Sharon Stills**

Speakers, speakerphone.

**William Pawluk, MD, MSc**

Put on speaker-

**Dr. Sharon Stills**

Yeah.

**William Pawluk, MD, MSc**

Put it on speaker-

**Dr. Sharon Stills**

Speaker-

**William Pawluk, MD, MSc**

And if you have to apologize, apologize. But, of course, if you're in a very loud, noisy environment, it's hard to hear, but, so do what you can, as often as you can. Stay away from the microphone, the microwaves to your head. So PEMFs don't have any of that risk. So a PEMF is not a wavelength. A PEMF is basically is bouncing out, out and back. So how far does it bounce out, depends on the intensity or the strength of the magnetic field. So if you've got a tiny little magnetic field it's going like this. If you have a big strong magnet, it's going like this. And that's important therapeutically. So as we can get into, with the bigger the magnetic field is the deeper it's gonna go into the body and/or



through the body. And a body is like air to a magnetic field. It's as if there's no body there. And I've done these experiments where you measure the magnetic field at a distance and put a body in the middle. There is no difference.

**Dr. Sharon Stills**

Hmm, interesting.

**William Pawluk, MD, MSc**

It's going right through the body. So another metaphor that I use, it's like the wind blowing in the trees. Can't see it. And the only way you know it's there is because the leaves are moving.

**Dr. Sharon Stills**

Right, okay, gotcha.

**William Pawluk, MD, MSc**

So the magnetic fields in the body are the same thing. We are, it's stimulating all kinds of action in the tissues and in the body. And that action, for the most part, is moving in the direction of facilitating function in the body or healing in the body. So it's only causing stimulation. It does nothing else. It's stimulating. And what it does when it passes through the body is it increases current in the tissues. Charge, in other words. So in other words, it's increasing energy. So if you imagine the body is a battery and that battery becomes depleted with use. So when you use a magnetic field, put a magnetic field through the body, all of a sudden the battery becomes recharged.

**Dr. Sharon Stills**

And we are an electrical body. We are.

**William Pawluk, MD, MSc**

Totally electrical. And some people say, well, we're saline. We are saline bodies. And, no, we're an electrolyte bag, bag full of electrolytes.

**Dr. Sharon Stills**

So the mechanism of action is to increase the charge and does this, what do you find? We have a bunch of women here who are either going through menopause or will be



going through menopause or have been through menopause. And we always are thinking about our hormones, but how would you explain to these women why PEMF and increasing their electrical charge is important?

**William Pawluk, MD, MSc**

So, basically, as a result of that electrical charge, the body takes that energy, and it says, oh, I got energy. So what do I do with this energy? Whatever I need. Now, if the body doesn't need it, basically it ignores it. So our homeostatic mechanisms, our natural balancing mechanisms, so when we open up a blood vessel, we heat a blood vessel, we opened it up, we get an increase in circulation. But as soon as the stimulus dies down, the body takes it back to what it would consider to be a normal state. So, essentially, the body's responding and then coming back down to whatever state it wants to come down to. And that means it's physiologically causing all kinds of actions in the tissues. And those actions include stimulating acupuncture points and meridians.

So the acupuncture system is an electromagnetic system. We call it chi, but it's an electromagnetic system 'cause they didn't know what electromagnetics was when they invented acupuncture, right? Now, they call it chi. So we call it electromagnetic. And so it stimulates the acupuncture meridian, which means it's doing acupuncture automatically. Anytime you put it on the body, anywhere there's a acupuncture point, you're getting acupuncture stimulation. So it increase circulation. It decreases inflammation. It initiates tissue repair and recovery, regeneration. So it stimulates ATP. It stimulates stem cells in the body. And that becomes important for other aspects of menopause, such as osteoporosis and osteopenia, maintaining bone density. It decreases inflammation because, and so if it decreases inflammation, what is it taking care of? All sorts of stuff. And one of the risk factors in menopause is what? Cardiovascular disease. Women get it more subtly, but it happens aggressively, very soon after menopause.

**Dr. Sharon Stills**

Yeah, it's the biggest leading cause of death in women-

**William Pawluk, MD, MSc**

Death in women postmenopausally is cardiovascular disease, exactly. So magnetic field therapy decreases the inflammation in the blood vessels. It decreases the inflammation



in the blood vessels in the heart. It decreases inflammation of the heart. So now we've got this whole COVID thing going on and people with the immunizations who have these immunization reactions and people who have COVID and get long COVID, magnetic field therapy just dampens the inflammation. Significantly dampens the inflammation. And then it heals the tissue. So, 'cause you're regenerating, you're not only decreasing inflammation, you're regenerating. I'll give you an example of the power of the regeneration of magnetic field therapy. I had this little girl that cut off the end of her thumb, just below her nail, in a door jam, It was a sharp-edged door jam, just cut it off. And the father, fortunately, called me right after that happened. And I said, sew it back on again, I heard, 'cause that's a bandaid, basically, putting the tissue back is basically a bandaid using your own tissue, right? You're covering the wound.

So I said, I've heard in other parts of the world where before age 11, if you cut off a finger before age 11, there is a reasonable chance it's gonna regenerate. So in my book, "Power Tools for Health," I have pictures of that. She did an hour and a half therapy with a magnetic system to her thumb, hour to an hour and a half a day. And you could see the suture marks where they put it back on again. So if the surgeons had at it, what would they have done? They would've cleaned up the wound and grafted it. Then she would have had a deformed thumb the rest of her life, right? Right, so we sewed it back on again, did the magnetic therapy. Literally, three months later, she's regrowing her nail.

### **Dr. Sharon Stills**

Wow.

### **William Pawluk, MD, MSc**

That's the power of the regeneration that makes, and certainly in a young child, that's a whole lot different than it is in an adult, but we know that even in adults we can, wound healing is speeded by half the time. I'll give you another example. I had an elective appendectomy for a tumor on my appendix, which is benign, turned out to be benign, but I had to have a partial cecectomy. So I had a laparoscopic procedure. So I had the stab wounds. So I put magnets on the little, these little magnetic coils, same ones that I used on the little girl, on my wounds. Right, it had one wound which is a control. And then I put it on the other two wounds, right away, soon as I got home, did it 24/7. That was Friday afternoon. I was back to work on Monday morning.



**Dr. Sharon Stills**

Wow, that's amazing. And I think when we see things on the outside, we get so excited. And sometimes we can't see, like if you just think about what it's doing on the outside, think about what it's doing on your inside.

**William Pawluk, MD, MSc**

On the inside, exactly. You see you have a thumb, what that's doing on the outside. What's it doing on the inside? So if you're doing magnetic therapy on a regular basis, not just now and then, not just going to a spa and getting some magnetic therapy, but if you're doing it on a regular basis, you're keeping, you're controlling things before they get to a point where they are so damaged, that it's very hard to repair or regenerate. Concept, we have a hundred trillion cells in our bodies. Every cell has about between 2,000 to 5,000 biochemical processes per second, all right, and when we're doing magnetic field therapy, what are we doing? We're helping all, we're energizing all of that activity, energizing it. So it doesn't get a chance to backslide. It doesn't get a chance to drop off and fail. And what's aging? It's essentially backing off and failing of systems in the body. We call that entropy. So PEMF therapy keeps that whole process sort of up, right, and maintained at a sort of optimized level.

**Dr. Sharon Stills**

So for women having problems sleeping or hot flashes, does PEMF play a role in that as well?

**William Pawluk, MD, MSc**

All right, so hot flashes. That's a challenging area. And other than hormone replacement, right, the therapies for hot flashes, other than hormone replacement, are not very effective. They're unpredictable. They're not the, and you have to often do the therapies, like SSRIs. You have to do them for all the time to prevent the hot flashes from happening. And then hopefully they're not as bad as they would be otherwise. But then you have the problem of dependency, not addiction, but dependency on those medications. So PEMFs, hot flashes are largely an autonomic dysautonomia, all right? They're an imbalance between the sympathetic-parasympathetic system. So how do you decrease hot flashes, thinking of it that way, as an imbalance in the sympathetic parasympathetic system. Well, you can stimulate the neck, you can stimulate the vagal nerves in the carotids, you can stimulate the start of the whole vagal system in the back



of the neck, in the pons and medulla. All right, so you can use magnetic fields to do that. You could even stimulate the stellate ganglion. There are injections now that people are doing for stellate ganglion blocks, right?

**Dr. Sharon Stills**

Yes. I'm trained to do those. And I'd rather put someone on a PEMF. I know that's what they'd rather have.

**William Pawluk, MD, MSc**

So, but you can stimulate the stellate ganglion with magnetic fields. You may need very strong, powerful magnetic fields to have it as a strong effect on the stellate ganglion. But the problem is that you can get a benefit from stellate ganglion blocks, sometimes for hours, sometimes for days, how predictable is the stellate ganglion block?

**Dr. Sharon Stills**

Right, yeah. We never know.

**William Pawluk, MD, MSc**

Right? So it's a challenge and the same thing with the vagal stimulation. So there's now some evidence about vagal nerve stimulation. And so what happens is stellate ganglion is, the reason you do that is because of the sympathetic nerves are overactive, right? But they're overactive because the parasympathetic system is underactive. All right, so what we do then if we stimulate the parasympathetic system through the vagal nerve, we get all the downstream benefits of stimulating the vagal nerves. But now this is a big topic. In fact, we discussed this, I had an interview in my summit, last summit, on vagal nerve stimulation.

**Dr. Sharon Stills**

Hmm, oh yeah, it's everyone, I don't wanna say everyone, but almost everyone, if not everyone, has synthetic overdrive and we are a society of deficient vagal tone, and it's really important. I run heart rate variabilities and it's always about up regulating the parasympathetic nervous system and we can't heal if we're stuck in sympathetic, we really have to be able to, it's okay to access your sympathetic, you need to know how to be fluid.



**William Pawluk, MD, MSc**

And you have to be able to access it.

**Dr. Sharon Stills**

Yeah.

**William Pawluk, MD, MSc**

'Cause you have to have a stress response, you better access it.

**Dr. Sharon Stills**

Right, but you gotta know how to then come back, like you were talking about, coming back down to stasis, and how to, you know, know when to put the gas on and when to put the break on. So are you saying that the PEMF is a way to upregulate the parasympathetic nervous system, stimulate vagal tone?

**William Pawluk, MD, MSc**

Yeah, there is a study, actually, that was done on the carotid artery using high intensity magnetic fields. The problem is they only did three minutes of stimulation. So they did find a benefit, but it was not a sustainable benefit. So we still need to optimize that approach. But we do know that magnetic fields will stimulate the vagus nerve. In fact, I stimulate the belly on a regular basis to increase the vagal tone in the abdomen. Where is the second brain?

**Dr. Sharon Stills**

Yup.

**William Pawluk, MD, MSc**

Right? So basically you're just quieting all of that activity down, in a whole area. It's a big area. But you can do it again locally. You can do it to the carotid or you could do it to the neck, cervical spine. And you just have to have the right magnetic field. So if you get the wrong magnetic field, wrong in the sense that it's not strong enough, you're just gonna have to use it for a longer period of time. Or if you get a stronger magnetic field, you can stimulate not only the vagal nerve, but you can also stimulate the brain.



**Dr. Sharon Stills**

Hmm, so let's talk about how, like, I'm sure some listeners are wondering, where do I get this magnetic field? Like, so what are the devices? How do we do this? Is 'cause, is it easy? Is it...

**William Pawluk, MD, MSc**

Can we hold that question?

**Dr. Sharon Stills**

Okay.

**William Pawluk, MD, MSc**

Let's hold it for some of the other benefits of PEMFs.

**Dr. Sharon Stills**

Okay, okay.

**William Pawluk, MD, MSc**

Right. I think that's a critical question. And we gotta answer that question. And I'll give you some resources for that.

**Dr. Sharon Stills**

Perfect, okay.

**William Pawluk, MD, MSc**

Osteoporosis, breast cancer, so female cancers, in general, sleep problems you mentioned, overactive bladder, extraordinarily common problem.

**Dr. Sharon Stills**

Huge problem.

**William Pawluk, MD, MSc**

Right? And magnetic field therapy is amazing for that through something called neuromodulation. Magnetic field therapy do neuromodulation. We mentioned the vagus nerve. That's a form of neuromodulation. And then depression, anxiety, they're part of



that problem. Also atrophy. Vaginal atrophy, vulvar atrophy. So you basically can help to plump up the tissue somewhat. Now, I think you still need to do, personally, I do recommend, regularly, BIHRT, bioidentical hormone replacement therapy. I think that's a staple. And if you can't do that, for whatever reason you can't do that, then magnetic field therapy becomes even more important. But BIHRT doesn't take care of all of the problems of menopause.

**Dr. Sharon Stills**

That's what we've been teaching. That's why I did this summit. I'm a huge fan of bioidentical hormones, but they're a piece of the pie, they're not the whole pie.

**William Pawluk, MD, MSc**

They're not the whole pie. Exactly. So collagen, that's a... Collagen levels drop during menopause, too. And I found out that most doctors, it's amazing how, actually, most doctors don't even recognize that women are testosterone deficient in menopause.

**Dr. Sharon Stills**

Mm-hmm, I know there's some doctors that say women shouldn't have testosterone, and that's just such a big misunderstanding.

**William Pawluk, MD, MSc**

Or premenopausally, what are the levels of testosterone in women and females? They're 25% of what males would have, but they still need that testosterone for muscles and bones.

**Dr. Sharon Stills**

Of course, just like men need a little bit of progesterone and estrogen.

**William Pawluk, MD, MSc**

And estrogen, exactly correct. Exactly, so it's a balance, right? And there's always aging. Menopause is a situation, let's say, of aging. Now I think that we have to find ways of treating menopause and we should be aggressive about it, 'cause I don't think women should suffer through menopause, personally, as a family physician, holistic physician. One of the reasons we have this bias is most of medicine has been controlled by males. They go through andropause, which they don't even recognize they have.



**Dr. Sharon Stills**

Exactly.

**William Pawluk, MD, MSc**

Right, 'cause they don't have hot flashes. But men develop osteoporosis, too. A significant percentage of men at age 75 have osteoporosis or osteopenia.

**Dr. Sharon Stills**

Absolutely.

**William Pawluk, MD, MSc**

Right? Because they're testosterone deficient and estrogen deficient. So aging is an important complex that PEMF therapy can slow down, can improve, because we increase collagen production in the tissues. But again, you don't do that by going somewhere, and getting a treatment, you have to be doing this at home every single day with enough intensity of the magnetic fields, to be able to saturate all the tissues of the body. And I have one of the most important actions of magnetic field therapy is anti-inflammatory.

**Dr. Sharon Stills**

Yes.

**William Pawluk, MD, MSc**

And I have a blog on my website about the need for stimulating the adenosine receptor. So we think of adenosine as just part of ATP, adenosine triphosphate for energy, but it's not. The adenosine receptor is on neutrophils. And when you stimulate the adenosine receptor, what are you doing? You're augmenting the anti-inflammatory action of neutrophils. And where are the neutrophils in the body? They better be everywhere. Right?

**Dr. Sharon Stills**

So maybe-



**William Pawluk, MD, MSc**

So magnetic field therapy-

**Dr. Sharon Stills**

Maybe it would've been easier to ask you, what doesn't PEMF therapy do? 'Cause the way we've got the immune system, we've got collagen, we've got brain, we've nervous system, we've got bones. I mean, it's just, you know, you start to, like, I often say there's no magic pill, but perhaps there's a magic mat.

**William Pawluk, MD, MSc**

And a magic mat works with everything else, right? It makes everything else work better. Let's talk about osteoporosis for a second. 'Cause I think this is also misunderstood. Women often think that when they go on the drugs, the bisphosphonates or the injections or Prolia or Forteo, that that's the magic bullet for osteoporosis or osteopenia. The problem is that you can't recover bone that's lost. It's very hard to do that. You can do that when you're 25, you can do it when you're 35, but it's very hard to do it when you're 55 or 60 or 75. But magnetic field therapy, one of the earliest indications for magnetic field therapy, by the FDA, was to heal nonunion fractures. This is fractures that won't heal. So after six months, if it doesn't heal, it's called a nonunion. Well, PEMF therapy was approved for healing nonunions.

So it does have significant bone healing effects and we started to use it. And there's plenty of research now to indicate that PEMF therapy is excellent for osteoporosis, but you have to build the bone. How long does it take to heal a fracture? However long it takes. But to truly heal the bone, if we re-x-ray a fracture two years later, you'll still see the fracture site, right? If you do an MRI or a CT scan on a fracture site that you can't see anymore on regular x-rays, you'll still see the aberration in the bone. And that's one of the reasons we say that we're a new body every seven years, 'cause it's the skeleton that has to be regenerated every seven years. So PEMF therapy stimulates bone formation, and you add the estrogen, you add the testosterone, you add bone-building minerals, and you can preserve the bone so that you don't lose more. Now can you catch up and rebuild the bone?

You might, women teeter off and on, osteopenia versus, right, not osteopenia. And so they start these therapies and all of a sudden they're no longer osteopenic, hooray! But



they still have lost bone density. And certainly once you get to osteoporosis, you might recover 5 or 10% of your bone loss, but that's about it, typically. So what you're doing then is maintaining. And PEMF therapy needs to treat the whole body. It's not just the DEXA scan locations, not just the spine and the hips. You have to treat the whole skeleton. So what are the most common fractures in osteoporosis?

**Dr. Sharon Stills**

A hip fracture. No?

**William Pawluk, MD, MSc**

No, vigorously, no.

**Dr. Sharon Stills**

Um, hands?

**William Pawluk, MD, MSc**

Hands and wrists, collar bones, foot fractures, stress fractures of the feet, ankle fractures. They're the most common. We DEXA scan the hips and the spine because those are the disaster fractures.

**Dr. Sharon Stills**

Yeah, I just have a male patient, actually, who just fractured, has a foot fracture. And that's the first thing is we gotta work you up and see what your hormones are it is going on with your bones, because it wasn't like a major accident. And that's like a big, big clue, if you have a fracture from something minor, that's a big clue that there's a problem with your bone health.

**William Pawluk, MD, MSc**

Exactly. So in terms of osteopenia and osteoporosis, the best solution is prevention.

**Dr. Sharon Stills**

I think prevention's always the best solution. So I have a question, is there a, how young could you start this, like...



**William Pawluk, MD, MSc**

Well, we have evidence that there's no harm in utero.

**Dr. Sharon Stills**

Really? So do you have children doing PEMF therapy?

**William Pawluk, MD, MSc**

Children, I actually have a blog on my website on drpawluk.com about using PEMFs in children for all kinds of conditions. So absolutely safe in children. I don't recommend routine use of PEMFs in kids because kids are growing and we don't wanna affect the growth processes. So if we're stimulating with a device that's strong enough, say, at the bone growth centers, we can overstimulate bone growth in those centers. So again, but if you're treating, say, somebody with cystic fibrosis or you're treating a diabetic child or any number of health conditions, autoimmune conditions or vascular conditions, then magnetic field therapy can be very important to keep inflammation in the body down and help to find the, help the body find that balance between overgrowth and regeneration.

**Dr. Sharon Stills**

Is there any concern with PEMF stimulating cancer growth?

**William Pawluk, MD, MSc**

So that's a good question. Most of the research seems to indicate PEMF do not promote cancer. They're not a promoter. Now most of the time, I do a lot of work with cancer, and breast cancer is another topic to spend a bit more time with. This is something women are probably not gonna want to hear, but I listened to a lecture from a, well, gynecologic cancer, but basically a breast cancer specialist, who spent years and years doing breast cancer research from Northwestern Hospital, Northwestern University. And he talked about bone stem cells. He said 40 to 60% of women, at the time of initial diagnosis of their breast cancers, already have stem cells of the bones, 40 to 60%.

**Dr. Sharon Stills**

Wow.



**William Pawluk, MD, MSc**

So at the initial diagnosis, and so what's the most common cause of death in women post breast cancer, 15, 20 years later. Breast cancer. If you don't die of something else, there's a good chance you're gonna die of your breast cancer. So the problem then becomes, what we're doing is. we're lackadaisical. And we say, well, we survived the treatment for my breast cancer, but unless we really do all the changes we need to do, the diet, the nutrition, supplements, and everything else to keep you healthy from an antioxidant perspective, particularly, free radical scavenging perspective, then you have a risk of those breast cancer stem cells being activated in your bones. And so PEMF therapy, like osteoporosis, then becomes an important part of maintenance therapy for women with breast cancer, with a history of breast cancer. And you have to do the whole skeleton, right, just like you do for osteopenia and osteoporosis.

**Dr. Sharon Stills**

We're all connected.

**William Pawluk, MD, MSc**

The hip bone is connected to the head bone, for sure.

**Dr. Sharon Stills**

And that is, I always, you know, it's such a fine dance, when someone comes through their cancer treatments and they're free of cancer. And then I always educate patients, we still have to be on board. And it's very sad, I've had a couple of patients who just thought, "I'm cured," and they didn't wanna participate anymore. And then the cancer comes back, it's...

**William Pawluk, MD, MSc**

Cancer's a chronic condition. If you got it once, if you got it in the first place, you have the risk for the rest of your life.

**Dr. Sharon Stills**

Yeah, so it's this opportunity, cancer gives you this opportunity to really pay attention to your health. You don't have to get into fear. If you empower yourself and make good choices, then you can actually feel good about it, and the cancer, I love when my patients come to me and tell me the gift that cancer gave them.



**William Pawluk, MD, MSc**

Right, right. I hear that regularly as well.

**Dr. Sharon Stills**

I know, it's beautiful and really brings it full circle. So, all right, everyone wants PEMF now, So, well-

**William Pawluk, MD, MSc**

Well, so that's whole body. So basically in my book, "Supercharge Your Health with PEMF".

**Dr. Sharon Stills**

Okay.

**William Pawluk, MD, MSc**

I provide guidelines for which kind of PEMF system you should get for the kinds of problems you have. So without being prescriptive about the system, we talk in generalities, do you need a local system, like, to treat an elbow or a thumb, right, or a spider bite. Or do you need something that's more regional, like a lung or a belly or a skeleton, a spine, or do you need something that's gonna be whole body. So we just discussed, I mean, you can get by with a half body system if you try to treat your skeleton, primarily your spine. But if you're trying to treat all the bones in your body, then you need a whole-body system. Now from a healing perspective or, sort of from a health perspective, I mentioned that we have a hundred trillion cells in our body and a 5,000 biochemical processes per second, so you decide which parts of your body you're gonna ignore. At some point, the body will tell you.

**Dr. Sharon Stills**

That you're ignoring it, exactly.

**William Pawluk, MD, MSc**

Right, so-



**Dr. Sharon Stills**

And it's passive, I mean, you're just lying on a mat. It doesn't hurt. Could you just explain, does it hurt or...

**William Pawluk, MD, MSc**

No, not usually. So depending on the kinds of conditions people have, higher intensity magnetic systems are important because of the whole inverse square law problem and the whole adenosines problem. So in other words, you need the right intensity magnetic field at the depth into the body to stimulate the adenosine receptors to decrease inflammation. So you need a strong enough whole-body system. Most people, typically, are going to get the most value from a 4,000 Gauss system, 4,000 Gauss, G-a-u-s-s, that's the measure of magnetic field intensity. There's gonna be a lot of listeners who were convinced to spend \$6,000 to buy a one Gauss machine. So if you spent \$6,000 for a whole-body magnetic system, if you didn't get told by whoever sold it to you, what the intensity of that system is, then you spent a lot of money for nothing. So a lot of these whole-body systems are very, very weak. They're less than one Gauss, or one Gauss, and you need 15 at the surface. Nevermind going deep.

**Dr. Sharon Stills**

It's just like with anything, you kind of gotta be a little educated so you know what you're getting and you're getting the right thing for you.

**William Pawluk, MD, MSc**

Well, and the people who spend \$6,000 for a one Gauss system, they're basically stimulating their acupuncture points and meridians. 'Cause they're so shallow. The action is so shallow. And they do feel better with it, but feeling good is not healing.

**Dr. Sharon Stills**

Good point.

**William Pawluk, MD, MSc**

There's a big difference between feeling good and healing. And we wanna do both. And so again, 4,000 Gauss is probably the optimal magnetic field intensity, whole body, preferably. And then if you do the whole body, you also usually will get a smaller applicator. So then you can treat a shoulder or an elbow or migraines, or again, hot



flashes. You can treat local areas, but you need the whole body for all the hundred million cells, a hundred trillion cells in our bodies. And then you need the local therapy for local problems.

**Dr. Sharon Stills**

And how often do you use your PEMF?

**William Pawluk, MD, MSc**

Every day.

**Dr. Sharon Stills**

For how long?

**William Pawluk, MD, MSc**

Every day? Well, everybody's gotta make a decision, right? So I have, because of my history of belly surgery and I've had several episodes of diverticulitis. So I basically focus on my belly. So I have a whole body, I have a half-body magnetic system that I treat my, I lay on in my bed, that runs all night long.

**Dr. Sharon Stills**

Mmm, okay.

**William Pawluk, MD, MSc**

And it's a strong enough magnetic system, it's about a thousand Gauss, for my belly, but I also use magnetic therapy for sleep, which is a big problem for women in menopause, as well. So I have a magnetic system that I put under, on my pillow, inside my pillow cover on my pillow, which is about 200 Gauss. And basically it's in what we call Delta. So Delta is the deepest level of restorative sleep. So it runs in Delta all night long. And that keeps me asleep.

**Dr. Sharon Stills**

Interesting, I love that. So are there any contraindications, is there anyone, are there any risks? Is there anyone who shouldn't use PEMF?



**William Pawluk, MD, MSc**

So magnetic field therapy is extraordinarily safe. A lot of people know now about using magnetic field therapy for called TMS, transcranial magnetic stimulation, for depression, treatment-resistant depression. We know MRIs are safe for most people, unless you have hardware in your body and then you have to be careful. And nowadays we actually have hardware, like pacemakers, for example, are what we call MR conditional. So the newer pacemakers are not affected by MRIs. And if it's not affected by MRIs, it's not gonna be affected by the magnetic fields that we use. So safety is relatively, the only absolute, I think absolute contraindication to magnetic field therapy is organ transplants. Not even pacemaker, not even defibrillators.

Again, you have to find out if they're MR conditional, and then you're usually gonna be safe using them with almost any magnetic field therapy. But transplant is a specific case where you're on anti-transplant rejection medication. So it's there for a reason to keep your immune system quiet, not necessarily balanced, but at least quiet. So you don't reject your organ. So magnetic field therapy affects the immune system and it can quiet it down or it could stimulate it. So we don't know what direction it's likely to take in the setting of transplants. So basically I say, no, with transplants, no magnetic field therapy, even with your big toe, I don't even know what it will do to the whole body when you stimulate your big toe.

**Dr. Sharon Stills**

Makes sense. Makes sense.

**William Pawluk, MD, MSc**

So that's the only time that it's basically an issue. So, jokingly, people say, well, what's the biggest risk with magnetic field therapy. And I say, it's the urge to put on a cape. And I say, it's okay, I don't even care if you buy a cape and you put on a cape. That's okay too. Just don't try to jump over anything tall.

**Dr. Sharon Stills**

I love it. I actually have a cape, so...



**William Pawluk, MD, MSc**

Well, don't get up on anything high and jump off or don't try to... Magnetic field, the point is, if you do a whole-body magnetic field therapy with the right magnetic therapy system, you can take care of a lot of aches and pains that you have. It may not be taken care of today. It may take some time for the magnetic fields to do the healing work that needs to happen in the body. Because removing pain is easy. You can do that with ibuprofen or aspirin or Tylenol, right, but that's not a solution. Right, it's a stop gap. So using it now and then for this ache or this pain is fine, but if you have chronic pain, you have to get to the solution for the pain. Right, if you get to the solution, then usually it's gonna take time to do the healing of the causes of that pain, the healing of the tissue. So if your pain comes back, you ain't done with healing yet.

**Dr. Sharon Stills**

Well, PEMF just sounds like there is, there's use for everyone. And it's like should be in everyone's home. We should all be, we would be slowing down the aging process, aging more gracefully, having more energy, sleeping better, having stronger bones, having better brain function, having stronger cardiovascular system, having a balanced nervous system. I mean, all the things that we're looking to do, this covers.

**William Pawluk, MD, MSc**

And if you have the urge to put on a cape, you better start looking around you in your household, that you may now be different than you were when whatever people in your household existed before you started magnetic field therapy.

**Dr. Sharon Stills**

I think we'll have to have a PEMF cape party, all the superwomen. I love it. Well, thank you so much for educating us and say the name of your blog again.

**William Pawluk, MD, MSc**

So drpawluk.com, d-r-p-a-w-l-u-k.com is the website that has all, a huge amount of information. There are two books. There's "Power Tools for Health," which actually has a bit more of the science in it. And I provide all kinds of references to support the use of PEMF therapy for those people who are skeptics and want more of the science and clinicians typically want more of the science. It's not that practical a book. So because it



wasn't as practical as people wanted, then I wrote the "Supercharge Your Health with PEMFs" book. And that's much more practical.

**Dr. Sharon Stills**

Great, excellent. And those are on your website-

**William Pawluk, MD, MSc**

Those are the main resources.

**Dr. Sharon Stills**

And those are on your website?

**William Pawluk, MD, MSc**

And the books are actually on the website. They're on the homepage of the website, you can see.

**Dr. Sharon Stills**

Wonderful, well, you are an inspiration and I love the work you're doing in the world and getting good PEMF tools out there, so that if you are gonna invest in your time and your money, that you're gonna get the benefit of what you're investing in. So I so appreciate that and all your knowledge and thank you for coming and sharing something different because I am all about looking at all the different options of how we heal our bodies. It goes, it's what we do. It's what we take. It's what we think. It's where we are. It's so many different things. And so this is such a powerful tool, like we've talked about the sauna and we've talked about cool plunging, and I love these tools. I think health grows so much from when we dance with these tools in our life and we use them and we remember that we don't have to reach for a pill bottle to get healing, that we can help stimulate our body's own natural healing. So thank you for doing that and sharing that.

**William Pawluk, MD, MSc**

You mentioned something that triggered a thought.

**Dr. Sharon Stills**

Okay.



**William Pawluk, MD, MSc**

And I've done this myself, I've had the shiny objects syndrome. So I've accumulated all kinds of devices. But when I started working with magnetic field therapy, I began to discover, as I started using all these other devices, that the best value for your money is the right PEMF 'cause often you don't need anything else. Now you could add other things as a complement to magnetic field therapy to take it even further. But if you're gonna start somewhere and wanna invest some money, then you're better off investing in the right PEMF system first. So for example, bone healing, if you're, somebody's thinking about doing knee replacements or hip replacements. Then don't do anything don't have that. You only need it in an emergency. Really. If you start magnetic field therapy, you do that for three to six months, you may discover you don't need a joint replacement.

**Dr. Sharon Stills**

And I would, I'm just thinking my son, who's also a naturopathic physician here in Phoenix. He does a lot of prolotherapy and saves a lot of patients from knee and shoulder surgery. And I'm thinking, wow, he needs to combine.

**William Pawluk, MD, MSc**

Integrate.

**Dr. Sharon Stills**

Yeah. He needs to combine the PEMF with that, I'm gonna call him as soon as we're done. Okay, well, thank you, thank you, thank you.

**William Pawluk, MD, MSc**

My pleasure.

**Dr. Sharon Stills**

It's been a pleasure. And so there you have it, everyone, another tool to help you on your hormonal journey. So thanks for being here. See you soon.

**William Pawluk, MD, MSc**

Thank you. Have a great evening.