Fueling up your mitochondria with PEMF Transcript

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Introduction to PEMF and Stem Cells

So you have the stem cells and we think of them as just, you know, they build, you know, become whatever tissue that's needed to be regenerated and then start to repair that tissue by becoming that cell.

But also it's also like you're mentioning the growth factors. I mean, they secrete that it's like a pharmacist in itself that the stem cells are. and they go to the location, they check the location, see, oh, I see that these growth factors are needed, these chemicals are needed, and then they just create this magic soup that is needed exactly for that tissue.

So whatever a person can do then, to maximize the activity of these stem cells. I mean, obviously, if you look for anti-aging, if you're dealing with any kind of health complaints, if maybe you've got a fatty liver or your GFR, your kidney function are starting to creep down towards 60 or maybe even below, you know, all these things then become then crucial.

Welcome to the PEMF Effect, where breakthrough science helps take control of your health. I'm Dr. William Pollack, and I'm here to guide you in tapping into the power of PEMF therapy for recovery, vitality, and total body wellness.

From overcoming chronic pain, optimizing brain health, boosting energy, and aging with strength, this podcast is your path to cutting edge solutions for lifelong well-being.

If you're ready to move beyond symptom management and tap into your body's natural healing ability, you are in the right place. Let's dive in. Today's episode is a previously recorded session from a summit where I was a guest speaker.

Well, Dr.

Guest Introduction and PEMF vs EMF

Pollack, I am so excited to have you on this portion of the regenerative medicine summit. I mean, there's nothing that is more important, I think, than PMF in this process.

So I just want the audience to know the breadth of knowledge I mean you you are like the PMF guy, I would say, so I'll just kind of read you so that they understand everything that you've done.

William Pollock, a medical doctor is a holistic doctor near Baltimore, previous academic positions at John Hopkins. and University of Maryland, so those aren't small institutions.

Your training is in acupuncture, nutrition, herbals, energy medicine, homeopathy, hypnosis, bodywork, and multiple other therapies. Consider the foremost authority on the use of post-electric magnetic field therapy, in short, PEMF, in North America, interested in holistic pain management, which is chemically where they use that, but it has, I mean, the amount of usage at pulse electromagnetic field is tremendous.

He's interested in new solutions to stubborn, chronic, and frustrating health problems. He wants to try to resolve the cost of the problem, not simply put a band-aid on it, which the pharmaceutical industry, they're very good at band-aid and symptom management.

Most conventional treatments for pain rely on numbing and dumbing. I like that. That simply make the perception of pain better, but don't heal the cause.

On the Dr. Ost show, they both agree that pain management should be focused on healing the cause after 25 years of seeing the risks and side effects of traditional health solutions and approaches.

And after studying various healing approaches, they discovered that PMFs provide the most benefit and allowed safe non-toxic, self-directed, self-controlled, and home pain management.

To this end, Dr. Pollack has worked with magnetic field therapies for 30 years and established an authoritative website, drpollack.com. He has authored two comprehensive books on healing with magnetic fields called Power Tools for Health and this year Supercharger Health with PMF Therapy.

The Supercharger Health A book describes how PMF can be used for over 80 different health conditions, how to select a PMF system to help and how to use it properly to get the best benefits.

This work is supported by over 500 scientific references. So it's not just all anecdotal. I mean, this is scientific that this works. and is the most authoritative yet readable and unbiased book on the topic available to date to help promote healing with PMF.

He has done well over 50 radio, podcast, magazine, and TV interviews combined. He's also been a co-host of a two-hour holistic health radio show in Baltimore for 10 years.

Podcast interviews have included Dave Asprey of Bulletproof and Ben Greenfield. Radio interviews included a two-hour session on Coast to Coast. Dr. Pollock, it is such a pleasure to have you on the show today.

Thank you so much. Thank you. It's my pleasure being here and sharing with you as well. I enjoy our rep RTE, our visits that we've had in the past that were always fun and engaging.

So, one of the things is that when you look about PMF and we also know, you know, EMF and we try to stay away from this electromagnetic frequencies that we are exposed to all around us and we would know how that negatively impacts our health.

So then when you look at the PMF units, obviously it's electricity in it. So how is that different than the EMF that we have all around us? So there are really fundamental differences between them and this is a major part of confusion for people.

We talk about open loop and closed loop. So when you do, let's say, Wi-Fi, or you do microwaves, which is where the biggest source that we're most concerned about, they're broadcast in the environment, just like radio waves and television waves and radar.

So microwaves are broadcast into the environment. They're around us all the time. It's very, very difficult to avoid them, even on the tops of mountains.

you'll see it. So what happens is that because they're broadcasting the environment, they actually have a waveform, right? So we talk about frequencies with those.

So EMFs and the kind that we're most concerned about are very short wavelengths. And those wavelengths are so short, they're gigahertz and high megahertz signals.

They're so short, they get absorbed by the body. So when you stand in the way of a microwave signal coming down a valley, for example, then you're going to be absorbing that signal to some extent.

That's the personal behind a microwave oven. Right. And when you absorb a microwave signal, what you're doing is you're heating, you're heating tissue.

And that's the danger. That's where the danger comes in. Now, if you have a router next to the office, if you have a smart meter, they're all broadcasting in the environment.

So they're what we call, again, open loop. They don't come back to the source.

How PEMF Works in the Body

A PEMF signal, pulsed electromagnetic field signal, is delivered in a coil, in a coil conducting current. My thumb, for example, is the coil. There's the electric curve flowing down that thumb.

And then opposite to that is a magnetic field. So the magnetic field is perpendicular to the flow of the current. And as the current flows through, it pulses.

And it's pulsed on purpose at different rates. Pulse rates, we call them. Some people use the word Hertz, which we don't really like to use. We prefer pulse.

So what happens is the magnetic field goes out and collapses. It never leaves the source. It goes out but it doesn't leave the source. It's tethered to the current.

So that's called a closed loop. That's extraordinarily safe because it's not going out into the environment and you're not talking typically about microwaves.

So there's a huge difference then between PEMFs and EMFs. The EMFs we're concerned about and the PEMFs that are designed for therapeutic purposes. So the microcurrent then I mean you talk about it's heating the tissue you know so and obviously the stronger it is the more heat it will have I would assume and also the faster it vibrates the more heat it would generate I mean the faster the frequency.

So what kind of because that is in addition to the heat there are other damaging effects on the tissue as well right it cannot impact your genetics it can impact You know, the mitochondria can impact.

There's so many damaging effects of that aspect. Well, there are. And the problem is, it's hard to separate out the heat component from any other disruptive component of the waves that are introduced into the body.

So the heating component is probably one of the most important. When you hold a cell phone to your ear, I see this regularly. Hold the cell phone to the ear, the ear becomes red.

Pull the cell phone away, and you can see the redness of the ear. And it could take an hour or two hours for the ear to dissipate, that redness to go away.

Now, the opposite ear will also turn red, not because the microwaves are going through the head, because they don't. They're absorbed very shallow way.

So the other ear heats up, too, by reflex responses. So if I heat my hand by putting my hand over a hot stove, it'll turn red in response to the heat.

My other hand will turn red too, not to the same extent as the hand directly to the heat, because the heat then causes all kinds of biochemical changes in the hand, including the circulation, which then goes through the rest of the body and affects the rest of the tissues.

But most of that effect, as you said, is local, and it's the heat, it's genetics, it disrupts genetic bonds, it disrupts molecular bonds, it agitates molecules, gets them activated and moving rapidly.

But I think a big part of the effect is the heating. Yeah, it was interesting. Just the other day had a new patient, you know, just through telemedicine, and he is working with the cell phone day in and day out.

And lo and behold, now he has a neuroma around his auditory nerve. On the side that he's using the cell phone. Exactly. He's sitting like this with the cell phone typing in orders that he was doing.

And so now he has a neuroma. So his options are surgery, which will then remove the tumor. but he won't be able to hear again. Or radiation, same thing, it would control the tumor, but it won't be able to hear again.

And so it's just kind of seeing the damaging effect, the impact that it has in your DNA, those microwave frequencies. But then looking then at the PMF, Is that something that can correct that?

How is that beneficial? You said that it doesn't leave the source, but it still has some electrical current to it and does that not have a negative effect on the body?

So the answer is that PEMFs have been found to be extraordinarily safe, extraordinarily safe. We now use something called RTMS. It's very common. So pulse magnetic fields have been approved by the FDA for a number of uses.

One of the more recent approvals has been for devices called RTMS, repetitive transcranial magnetic stimulation for treating treatment resistant depression, right?

These are high powered magnetic fields, $8,000, $6,000 applied to the brain. And so what happens is that what they actually do is they put the coil right over the motor cortex, the part of the motor cortex that controls the thumb or the hand on the other side.

They crank up the magnetic field intensity until you get a depolarization within the brain to produce currents in the brain that then stimulate the motor cortex and then the hand starts to move, right?

That's called the motor threshold. Then what they'll do is they'll take the core out and put the core over the front of the forehead at 20% to 50% above the motor threshold to treat depression.

This was originally developed as a replacement for ECT, electroconvulsive therapy, so it's considered very safe. Hundreds of millions of people have been treated using these high intensity magnetic fields with almost no consequence.

In fact, in my book, Power Tools for Health, I talk about the safety of PMS, including the safety of high intensity magnetic fields to the brain. So they are extraordinarily safe.

One of the reasons they are is because the wavelengths are too long. They're not really wavelengths, right? It's a pulse. It's not a wavelength. And so the wavelengths are the ones that cause the damage, especially the very short wavelengths.

So the pulse is a whole different ballgame when it comes to what it does in the body. So if you lay on the maths and all these different devices, because that is obviously common concern.

I just want to kind of make people understand that there's There's no kind of EMF danger because of there's this pulse that's taking place and the wavelengths are much longer.

So you don't have that heating element and you're just activating cellular functions within the body. But when I was the vice president for medical affairs, or for the vice president, basically, medical affairs for the North American Academy of Magnetic Field Therapy, which is long gone.

But we used to have meetings every year. And we would have discussions with physicists and engineers and doctors and physiologists about EMFs and PEMFs and the differences in terms of what they do.

Again, the consensus, clearly the consensus is that PEMFs are safe. Oh, I love it. So what does EMF do in the body? I mean, I'm not EMF. What does PEMF do in the body?

What are some of the regenerative aspects that PEMF do in the body? Because it's something that we should use on a daily basis. And it's really beneficial for anti-aging, for regeneration of any kind of tissue.

Absolutely. So the principle behind the way PEMFs work in the body is that you have a pulse.

Cell Injury, Repair, and Regeneration

So it's a magnetic pulse. And that magnetic pulse goes up very rapidly. And as it's going up from zero to the maximum intensity, it actually creates charge in the body.

That's Faraday's law. It's the induction of current in the body. So we actually induce currents. We induce charge, increase charge in the body. with that every single pulse does that.

Now, then what happens, what does that pulse do? By increasing charge in the body, there's probably like 25 different actions, at least in the body of that pulse.

So the body then reacts to that pulse, increases charge, and as a result of that charge, you get increases in circulation. You get DNA repair. You get tissue repair.

You get increased circulation, decreased inflammation, increased nitric oxide production, immune modulation, immune benefits, reduction in inflammation, as I mentioned.

So the list is like this 25 different actions. One of the things we've discovered more recently with PMS is they actually have an anticanabinoid benefit.

So that's like taking marijuana, cannabis, or CBD. PMS have that action. So there are receptors in the body that take that CBD or cannabis and basically start producing metabolic changes as a result of that receptor being stimulated by the cannabis.

Well, PMS actually directly stimulate the cannabis receptor. So you don't have tolerance issues. You don't have the drug issues. You don't have metabolism issues that you have to deal with.

It's direct stimulation of the cannabinoid receptors primarily in the nervous system. but anywhere in the body. But the only thing that's been studied so far has been the nervous system.

Are you tired of living with chronic pain? Medication only masks the symptoms, but real healing starts at the cellular level. I'm Dr. William Pollack, the leading expert on PMF therapy.

Pulsed electromagnetic field therapy is a science-backed, drug-free solution that helps reduce pain, speed up recovery, and improve overall health. Right from the comfort of your home, Take advantage of an exclusive 10% discount on DrPaulik.com PEMF Systems.

Visit DrPaulik.com, that's D-R-P-A-W-L-U-K.com, to register and claim your savings. This limited time offer is available only to registered listeners.

Don't miss your chance to experience the benefits. Terms and conditions do apply. Don't just manage pain. Transform your health. Visit DrPauloth.com today and let's get started on your healing journey together.

And so, looking at aging for instance I mean you just mentioned all the different things that that would prevent rapid aging and will slow that down I mean talking about circulation.

Yeah, immune modulation and inflammatory. and then obviously energy production within the cells. I mean, all of those things are huge when you want to reduce aging and be vital, when you deal with aches and pains all over the place, your brain is not functioning the way that it used to, or your energy is not at the same optimum level.

So including PMF, that would kind of maximize your anti-aging potential. Totally. In fact, actually, if you don't mind, if I can share a couple of slides.

Yeah, I would love to, please. So here's a slide that I want to show you about some of the effects of PMFs, basically what they do. One of the most important benefits of PMF, especially in terms of regenerative medicine, is the ability of a PMF to reverse cell injury.

So this comes from the cell injury model, which is in the standard textbooks of the cell and cell injury and so on. So anything that damages a cell, whether it's radiation or heat or cold or trauma, cutting it, burning it, Anything that damages a cell causes a certain sequence of changes in the cell that are damaging.

We'll go into that in a second. So at one stage, you have what's called reversible cell injury. If the cell is not damaged to a point of death, then basically the changes can be reversed.

And as the cell becomes more and more damaged, cell function decreases until it gets to a point where it becomes irreversible. Now, you and I as doctors, we know that as the injury progresses, you get to a point where you can actually see the damage.

You can see the burn, you can see the cut, et cetera. But with a lot of conditions that we deal with, particularly immune condition, you don't see the damage.

Generally speaking, people who have symptoms, they have changes physiologically, they have biochemical reactions. Then if you start looking at that tissue that's having those biochemical reactions, let's say the liver, and you do biopsies of the liver, then you can see at an early phase what's called ultra-structural changes, ultra-structural microscopes.

Eventually, you and I, as clinicians, we started using, well, we'd look at a wound, then we would do a biopsy, and we'd look at that biopsy or a urine sample under a microscope, a light microscope.

So then as this progresses, as the duration of injury progresses, and the amount of damage progresses, it becomes more and more and more obvious. So it's not just biochemical anymore, it's actually physical.

So that's the process. Then what happens is in terms of the cell, Normal cells can die based on two mechanisms, necrosis or apoptosis. So necrosis happens when there's damage, usually external damage, but it could be internal damage too when you have an infection.

Then you have swelling of the cells and membrane blobs, etc. And then as that progresses, then you get necrosis. The cell dies and breaks apart. and then the body sends in macrophages and white blood cells to mop up the damage.

With a normal cell that gets old, senility, it's outlived its usefulness, it goes through an involution process where it also fragments and then you have apoptotic bodies and then phagocytes or white blood cells basically eat up the fragments.

That's a natural process of aging and cell death. part of the cell injury process. Now, cell injury then causes certain changes in the body. A decreased ATP in the cells, mitochondrial damage, the changes in the flux of calcium in and out of cells, which causes buildup of energy on the outside of the cell.

So the cell is now compromised and can't function properly. Reactive oxygen species have caused damage, oxidative stress damage. All of this also ends up with membrane damage.

which then can be a result in lysosomal membrane damps. Lysosomes are basically eat up cells, or they break down the cells and then they eat them up at protein mispoly.

So these are all the consequences of cell damage and cell injury. Turns out, PEMFs affect each one of these actions. They don't do it all at once necessarily.

The body will decide how it wants to deal with that cell injury and that damage. So then what happens is that all of

this ends up with cell damage. I want to show an example of a child where we use the magnetic field therapy to heal injury.

This child cut off the end of her thumb, three year old, in a door jam, just cut it right off. And the father called me before the surgeons had at it.

And what the surgeons would have done, they would have cleaned it up and grafted skin to cover the wound. That's a standard approach to that kind of injury.

So that child would have had an abnormal thumb for the rest of her life. That thumb would have stopped growing naturally the way it would normally have done.

So we convinced the father to have the surgeon sew the piece that was torn off back on. You can see the suture marks, right? Purple, as you can imagine.

So that tissue has no vascular supply whatsoever. It's essentially dead. So that child did a local PNF therapy, a device to the thumb, an hour to an hour and a half a day.

So this is when it started. started PMF therapy there, did PMF therapy for three weeks on August the 6th, started on the 12th. Now look at that, it's reattached, it's regrowing, regenerating into the area of the damaged.

So now you have a scab, you have dead tissue, so the dead tissue has to fall off. At six weeks, look at that, almost totally pink. And here's a little bit tough of scab left, of that dead tissue that the body's gonna get rid of.

Now this is about 12 weeks. So from September the 12th of July 12 to October the second almost 12 weeks. Look at that she's regrowing her nail. It's incredible.

And it's just I mean because it's a very visual. dead tissue, how it becomes alive and how the programming of the body, because the programming is the healthy thumb.

And so we're seeing it on the thumb, but we know exactly this happens in the brain, in the liver, in the kidney, in the joint. It's the same kind of process, right?

whatever tissue whatever regenerative capacity that tissue has so that so and every tissue the body has different regenerative capacity right in an 11 year in a three-year-old now in an adult the rule of thumb is that dr becker discovered this a long time ago bob becker becker is that up to about age 11 you can regrow that thumb from the first joint out you can't it's hard to regrow before that, musculoskeletal regeneration.

But a three-year-old has an amazing capacity because of the amount of stem cells they have in their bodies and the amount of general energy they typically have in their tissues.

They have the capacity to regenerate. Salamanders do that because they have a genetic sort of history that they've retained to be able to regenerate limbs and whole limbs, in fact.

And those are the studies he was doing is either cutting off the tail and then using electrical stimulation and then that would then regrow the tail. Exactly.

Yeah, it just shows if the body has that capacity by the proper stimulation, which is what PEMF will then supply, you can then regenerate. And PEMFs increase voltage in the tissues.

As I said, they increase charge. And it's the charge induction, the increased charge in the tissue that provides a stimulus to do all of this. Let me show you something else.

So here's a slide in terms of the different tissues of the body and how they regenerate. So liver cells are replaced every three to 500 days.

Stem Cells, Growth Factors, and Tissue Healing

Intercostal, the muscle cells in between the ribs regenerate every 15 years. The wisdom tooth stops growing basically at 12 years of age. Internal intestinal cells replaced every 16 years.

Skin cells are replaced every 39 days. The whole skeleton basically is replaced about every 10 years. Hippocampal brain neurons, hippocampus neurons are replaced every 20 to 30 years.

So this is the body cells of the body, most of the cells of the body have a capacity to be for generation at some level, but all the tissues are different.

So you can't expect the skin wound is going to heal a lot faster than a brain will right because of the regenerative cycles of the of the tissues themselves.

Heart muscle cells stop growing at 10 years of age. Red cells replace every 120 days. Fat storage cells are replaced every 10 years, and so on. So we rely on the body's natural capacity to be able to regenerate.

But what happens is that these are natural process. This is what happens in a normal body without stimulation, without stimulation and without growth factor.

Right now, The time of regeneration is important. So this slide is really important from the perspective of how much stimulation do you need? You can't just do five minutes.

Some people are selling peanut systems. All you need is eight minutes a day, right? So this is this is research done on non-union fracture. Talk about regeneration.

So these are fractures that after six months have not healed. Can we call them non-unions? And they're a disaster, because if you don't do something, it's never going to heal.

Typically, they remain non-unions. And then you have a non-functional extremity. And they most commonly happen in the upper extremities, in the hands, in the tibia and fibula.

Those are the major areas where these happen. So what they did is the FDA approved a device that's about 18 Gauss. So 18 is a very low intensity magnetic field.

And they were magnetic. applicator over the area of the fracture. They're supposed to treat for nine hours a day, nine or more hours a day. That's what they're supposed to treat for nine hours a day.

It just shows I mean because the cell is always functioning. I mean it has how many how many chemical reactions does happen per second. It's like 2000 different chemical reactions.

2000, 5000, depending on what you're counting and how you're counting. Yeah, exactly. And that's every second. So it's not like the cell just, I'm gonna take the day off.

It's working all the time. So that's why that continual supply of PMF, it increases the activity and the function of the cell in what it does every second.

and it increases stem cells. So part of regeneration is that you have to replace dead cells, you have to replace damaged cells, and that's the function of stem cells is to replace the damaged tissues.

So in this case, the people who did nine hours a day, healed their fractures 76 days earlier, right? More than two months, almost three months earlier.

The people who only did three hours or less a day took 188 days to heal their fractures. So if you don't do what you need to do, you're just not gonna heal fast enough.

So we have this bit of a magical thinking process going on. Well, just give me the stem cells and I don't have to do anything else. And you're relying on the body then to take those stem cells and do something with them and heal them.

But I tell people you can't grow a garden in a swamp. So the effects of PMS on stem cells is to increase proliferation, they increase viability, they increase cardiac markers, neurogenic markers, bone markers, cartilage markers.

So they stimulate stem cells basically throughout the whole body. So here we're looking at some of the main, I mean, main things that people are plagued by.

I mean, obviously heart disease is like the number one killer. So exposing yourself then to continual PMF treatment will then impact then all your cardiac markers and also regenerate the heart muscle and faster, you get neuroregenerative.

Yeah, so now we're looking at all the MS, we got dementia, Alzheimer, Parkinson's, osteogenic. I mean, who does, you know, who out there, especially all the females, they're all nervous about osteoporosis, osteopenia, and then, and chronogenic arthritis, rheumatoid arthritis.

So, it hits like all the spots that relates to aging, just using the PMF. Just using PEMFs. So to go back to the point you were making about the fact that we have 5,000, 2,000 to 5,000 biochemical processes per second.

How much treatment time do you need? And I say, I don't know. Your body's gonna tell you, right? So if you apply it long enough, fortunately with PEMFs, most of the time you can't do harm.

And where you do harm is A, you do it too much too fast. You're not allowing the body's capacity to catch up to the stimulation. Or B, you've got equipment in your body that's at risk with the magnetic field stimulation.

So beyond that, it's almost impossible to do damage in the body. PEMFs, I've discovered, don't cause problems. They reveal problems. So what you're trying to do with PEMF therapy, when you're talking about 5,000 biochemical processes per second, You're working here.

This is the area of the body, the cell that you're trying to work at. You're trying to improve cell function to maintain it way up here at the top of the curve as much as you possibly can.

And then so the cells live longer and they live healthier. And then the body gets rid of the cells that need to be cleaned out because we can't choke up the cells, the tissues with cells that are not functioning properly.

Well so then we have and when you look at kind of that cell damage theory and in regards to aging we have these terms called in inflammation aging and senescent cells and you know cells that are and then we're talking about apoptosis you know cells that are not being cleaned out I mean we know in a home you know if you want to have a a nice home, free from infections and all these kind of things.

We continually need to clean out old junk and then we need to support the health of the house. So it's the same in the body. We continually need to clean out old in order to be able to replace it with the new.

If we don't get rid of the old, you know, we can't put new things in. And so now we have a tissue, whether it's joints, you know, whether it's kidney tissue, whether it's brain tissue, whatever it may be that then have, let's say 30% of old cells that are just gonna hang it out, that hasn't been broken down, cleaned out.

So obviously that is gonna impede the function and also impede the integrity of that tissue. Yeah, an age-related memory loss, even to some extent Alzheimer's.

So the Alzheimer's process leads to beta protein being deposited before it gets to neurofibrillary tangles, before it gets to plaque. So if you can clean house, constantly be cleaning house, they don't build up.

Yeah, and then if it goes all the way to complete dysfunction, then we look at cells becoming cancerous as a survival mechanism. And now they are then secreting chemicals that are protecting their own existence.

And from what I know, PMF is even beneficial in that, in controlling all those kind of cytokines and chemicals that cancer secretes for their own survival.

Correct, correct. And so they bring in new cells, they bring in healthy cells, they help the immune system to clean things up. They also help the immune system to isolate the cancer.

So what happens is magnetic field therapy doesn't necessarily kill the cancer, although that's a possibility. We don't have really great proof that that's true.

But you can isolate it. And if you can isolate it, you can live with it, depending on where it is, right? And how big it is and how bad it is. Yeah, yeah, and at the core of all the kind of anti aging and energy of you're looking at the mitochondria and there you have the electron transport, you know, chain, you know, transport chain.

and that we depend then on the flow of electrons. And so obviously, if we then support using PEMF, we can then support that flow, which will increase the energy within the cell so that the cell can repair better.

And we also know that the mitochondria holds a lot of the cell depth switch to see, this cell is too old, let's flip the switch, let's kill it off. or this cell is salvageable and then it would have the energy to be able to regenerate and repair and so PMF can support that as well.

Well, one of the questions that would be asked by what you're just saying is that can magnetic field therapy actually increase cancer production in the body?

And the research is showing that PMFs do not initiate cancer process. The only thing that a PMF might be able to do to a cancer is by increasing blood supply, usually temporarily, because they start moving circulation anywhere in the body.

The cancer cells need significant amounts of blood supply. But what happens is that blood supply actually floods the cancer cells with reactive oxygen.

So in its own way, it's stunning the cancer, even though you're increasing circulation. But temporarily, cancers can grow slightly because of the increased vascular supply.

But then as you keep doing the stimulation, then it begins to involute. And I know the mitochondria, since it is dysfunctional in the cancer, it only operates within a very narrow band.

So if you push then the mitochondria and activate, so it works harder, then it starts to leak out a lot of reactive oxygen species into the cell to cause then cell deaths, to kind of trigger the death of that cancer cell.

So yeah, at the end of the day, it helps to support the body clear out cancer cells. Well, since magnetic fields have so many different actions, what happens is I tell people, I can't decide what those actions are going to be.

You know, I can't decide whether it's going to be circulation. I can't decide whether it's oxidative, increasing oxygen species or inflammation reduction or ATP production.

The body decides. I give the body a stimulus. All I'm doing is giving the body a neutral stimulus and then the body takes from it and does with it what it wants.

And to the point where you're talking about low and slow, I mean, so what we're doing with PMF is that we're turning on a lot of processes, you know, within the body.

We give the body energy, you know, it gets energy and they start to clean out closets, you know, and bring it all, all

these toxins and heavy metals and things, you know, start to try to move these things.

Yeah. And if you give the body too much energy, all of a sudden, you flood it with a lot of processes that the body kicks in, maybe too much chemicals, maybe immune system is becoming too active, going after Lyme disease or whatever it may be.

So that's why it's good to kind of gradually increase and see how the body's responding. Right. I usually use the analogy of athletic training. You don't get off the couch and run a marathon tomorrow.

You have to train. So what we're doing with the body is we're pushing the body. We're essentially training the body how it should act with more energy.

So I says, I have an energy deficient for so long. I don't know what to do. I'm functioning at the level of low energy. Right. So now I've got more energy.

What do I do with this energy? Right. And then the cells decide over time. And then we retrain those cells because now they have more energy. They could do a lot more.

and then optimize their function. And expand a little bit on, you use the term, you can't grow a garden in a swamp. I mean, I know with PMF, I mean, you're bringing in energy, but I would assume also you need to support a lot of the kind of the liver, the kidneys and all the detox processes.

I would assume also you would need to bring in electrolytes because you need to have something to act on with the PMF. Can you expand a little bit more on that?

Well, let's use the analogy of a swamp. You're going to clear the swamp and you're going to try to grow corn. What do you have to do? You have to drain the swamp.

Then you're going to have to plant, but you're going to have to get rid of the weeds. You're going to have to take a lot of other steps before finally you can start growing a crop in what used to be a swamp.

Well, in the body, the swamp is edema, inflammation, All those are the elements of a swamp, lack of blood supply. So in other words, lack of circulation, lack of flowing water, it's stagnant water, and it's growing bacteria, it's growing viruses and fungi and molds and so on.

So once you start to clear the swamp, once you start to get the tissues more normal, Now, stem cells can go in and do their job. Because if I put stem cells into a swab, I put stem cells into an area of inflammation.

Aging, Entropy, and Anti-Aging Support

One of the functions that stem cells can have is to clear inflammation. But then they've done their job. They're not there then to do what you really want them to do, which is to heal the tissue.

So once you start removing the swab, then you start growing. So magnetic field therapy then increases the proliferation first of the stem cells. So they now grow.

And then they differentiate better. But if you differentiate it, say bone cells, you said, or like we talked about the non-union factors. So you increase bone cells, but you don't have enough calcium.

You don't have enough magnesium or boron. You don't have all the elements that you need to make new bone. So then what PEMFs do then is not only increase the stem cells, but then they bring in the nutrients to make new bone.

So that bone then becomes hardier and survives and will live longer. We've seen this with PEMF therapy with stem cells for the heart, cardiogenic stem cells.

Their survival rates are terrible. So if we were doing a PMF therapy to the heart before we tried to do stem cells for the heart, the heart's already, we're clearly the swamp, the heart's already better, the terrain is already better for those stem cells to come in and do their job, and then they survive as cardiac cells.

which they're supposed to survive, and they're supposed to do their work. They work hard. Cardiomyocytes work hard, and they need to be able to survive.

So they need more energy. They need to be able to have a proper environment to work within. That's the spectrum of what PMS could do with that. So you imagine kind of edema and you have this kind of swamp environment in the tissue and obviously to drain the swamp you need circulations, you need things to move and PMF will help with that movement with the circulation and also it will help to reduce the inflammation in that area because when you have inflammation You have the edema.

You have immune system cells that are secreting cytokines that create that area, make that area swollen. So the PEMF will help control that. And then you can then support the detox pathways using your eliminatory, your your bowel, your kidney, skin, lung, liver, supporting your ability to eliminate that as you're also increasing the flow and then supporting them nutritionally so you have all the components that you need in order to be able to regenerate and then bringing in then the PMF to really kind of support that whole process.

I mean, that seems to be kind of like a winning formula. Then if you want to add things like peptides and stem cells and all of these things, but it becomes a very expensive therapy if you don't create the right environment for them.

Well, and if you do stem cells without doing all the things that you just talked about, again with bone cells, if you don't supply the nutrients for the bone cells, the minerals for the bone cells to be able to mineralize, if you will, then you're not going to have adequate bone.

You're going to have soft bone. And then you're not a whole lot better off than you were before. So magnetic field therapy opens cell membranes. The membrane channels begin to open.

And when they begin to open, they allow a better absorption of nutrients into the cell to do the work of the cell. But you also get rid of waste better.

So it's like opening the windows and doors in a house, a stale house. Open the windows and doors. Air gets in and stale stuff gets out. Yeah, yeah, it's kind of like nightingale.

Yeah, I remember that the nurse, you know, how she opened the windows in order to be able to bring health into the hospitals. Better air, oxygen. Yeah, exactly, exactly.

So can you go through a little bit more kind of in regards to the stem cells, you know, because stem cells and peptides, I mean, we use these as growth factors.

and all the different ways that, and we have stem cells ourselves and we have like the mesenchymal stem cells, you know, they tend to kind of line the blood vessels and they just kind of hang out there and wait for any kind of injury or any area that needs support and then they will then go to that area to help to regenerate.

So what are all the ways that PMF activates and what do they do to these stem cells? Your body was designed to heal, but illness, chronic disease, stress, injury and time can slow that process down.

What if you could restore your body's natural ability to recover, recharge and feel its best? The key to healing is giving your body the energy to repair itself.

PEMF therapy does exactly that. recharging your cells, improving circulation, reducing inflammation, and helping you function at your best. For decades, I've studied this technology, worked with hundreds of medical professionals, and helped thousands of people reduce pain, regain energy, and take control of their health.

However, not all PMF devices are created equal. No one size fits all. We offer personalized consultations so you can find the right device for your needs, backed by real science and trusted results.

If you're ready for a real solution, let's talk. Schedule a consultation at drpauluk.com, that's P-R-P-A-W-L-U-K dot com, because real healing starts at the cellular level.

Okay, so let's back up a little bit. There was a study done by NASA on neuro stem cells. So they're using a magnetic field that was about 10, around 10 hertz and about maybe around 100 gauss.

So pretty significant using culture plates. So this is not human, this is in culture, but they found almost a 400% increase in the growth of neuro progenitor cells, 400%. But they also, what they also did, and I was amazed at this, They also looked at those stem cells and the growth factors they were producing.

They were producing around 400 growth factors. Not only were the stem cells growing, but they were actually producing all these growth factors. So you have the combination of those two things going on at the same time.

You can grow all the stem cells you want, but if you don't have the growth factors to support them. And in regenerative medicine, we supply growth factors.

as well to help the regeneration process work better. Well, P and F stimulate tons of growth factors at the same time as they're stimulating the stem cells.

So again, the first thing you're doing is you're stimulating the body's capacity to make new stem cells, like for bone marrow. I had a case, a situation where a woman was going to go and have a bone marrow stem cell harvest.

And she had had a couple of harvests before and had maybe 200,000 bone marrow stem cells harvested. She started doing magnetic field therapy, whole body magnetic field therapy.

Two million stem cells harvested. So not with a whole lot of magnetic field therapy, all of a sudden the ball marrow kicks in and starts to produce all these stem cells.

So the same thing happens in the skin, the same thing can happen in the brain, although the brain tends to do it a lot more slowly than other parts of the body.

So we're not only stimulating them from being produced by wherever tissue is being stimulated, and that's the value and the benefit of whole body stimulation, because then you're activating stem cells through the whole body, not just one organ.

So you increase the production, you increase the growth factors, and then you help to support the differentiation. So you're not only growing them, but they're also turning into the tissue that you want.

So if you're trying to do bone, then you stimulate the bone. If you're trying to do liver, then you stimulate the liver. And those liver stem cells are going to differentiate better.

The heart, the same thing. So you can target the therapy to the area where you want the stem cells to be regenerating and growing and becoming normal tissue.

And what's fascinating with stem cells, I mean you talk about the growth and growth factor so you have the stem cells and we think of them as just, you know, they build, you know, become whatever tissue that's needed to be regenerated and then start to repair that tissue by becoming that cell.

But also, it's also like you're mentioning the growth factors. I mean, they secrete that it's like a pharmacist in itself that the stem cells are. And they go to the location, they check the location, see, oh, I see that these growth factors are needed, these chemicals are needed.

And then they just create this magic soup that is needed exactly for that tissue. So whatever a person can do then, to maximize the activity of these stem cells.

I mean, obviously, if you look for anti-aging, if you're dealing with any kind of health complaints, if maybe you've got a fatty liver or you're a GFR, your kidney function are starting to creep down towards 60 or maybe even below, all these things then become then crucial.

And as you said, you have that window of opportunity that you can then support the organs while the cells are damaged, but they're not dead. You want to get to it as quickly as possible before you have the cells being dead.

Irreversible injury. Yeah, exactly. Looking at aging, how do you describe aging? What are the processes? We talked about inflammation, we talked about Yeah, what is the definition of aging in your mind?

I went to a conference at Cambridge. I was invited to go to this conference and we did a poster presentation about aging because the conference was strategically something anti-aging basically, right?

Senescence. And I said, well, all these people there were studying rats and mixing older rats with younger rats and having the older rats function better because they were now in a colony with younger rats.

So I said, all of that's good. And stimulating the genetics, all of that's good. So what is aging for most humans? I call that death by a thousand cuts.

As a physician, it's all the stressors that you have in your lifespan that cause the changes in your body's ability to repair and recover. So if we could, we would stay 25 years old for the rest of our lives.

That's our optimal. We stop growing at around 25, 24, 25. And then you want to basically be level for the rest of your life, live a good life, and then fall off the edge of the cliff.

I would love that. That'd be awesome. All at once. So what happens though is that that's not what happens. Aging happens, senescence happens, poor diets happen, stressors happen.

And tell senescence. I mean, I know we use the term, but there may be people that have no idea what senescence means.

Choosing the Right PEMF Device and Treatment Dose

aging and that means the cell gets old just like a house you mentioned this before you got a house you built it is brand new all everything's new so it's outgassing all the stuff from the carpets it's got new paint on the walls and it takes this is called entropy right it takes energy to maintain the house as you made it right and as the furniture ages um gets older the fibers begin to break down due to entropy and entropy is the amount of energy that you have to have in a system to maintain that system in the structure that that in which it is and the human body is no different than a house in that sense or a car it needs energy to be able to sustain itself at the level in which it was originally designed and so what happens as you get older entropy happens You get decreased energy supply.

The cells don't recover and repair as fast. You don't have as much ATP. The number of mitochondria decrease. So you have all these factors that happen as you get older anyway, because of entropy.

Now, can we ever keep up with the entropic needs? That's a good question. We would like to stay at 25, right? Well, and we do lots of things to be able to do that, but still, no matter what, we haven't covered the waterfront.

Yeah, yeah. So, but you haven't, and people live longer now. I mean, we have all these medical treatments and people live longer, but they are not necessarily living healthier.

They are not living a good life. The quality of life is actually, it gets worse faster, but will live longer in a bad state. So it's almost like pharmaceutically, they have a bigger window to sell medication to people.

Yes, that's true. I tell people it's about getting off the edge of the cliff. So what we do medically, if I have heart disease or I have an occlusion of a vessel and I get a stent or a bypass, then what have I done?

I've gotten myself off the cliff or at least I've gotten myself off the edge of the cliff. I haven't gotten off the cliff, just over the, just the edge of the cliff.

And the research is showing that people who have bypasses and stance have these cardiac procedures have bought time, but they haven't bought a decrease in aging because they haven't changed the factors that led them there in the first place.

So if you don't change those factors, and then not only do you have to change the factor so you don't keep going down that slope that you were on, you want to get that slope higher up, but you're not going to reverse the damage that you already caused.

If you're already bone on bone, then all you have to do is find a way to live with it. But if you can get at that earlier, like we were talking about, where we can then stimulate the regeneration of the cartilage between the joints.

And so even though you may not have arthritis, but then continually support the body, then you are obviously, you're gonna be away from that cliff. You're gonna have a larger buffer zone because we, A lot of these diseases, we look upon health medically, they look upon it as absence of disease, where we don't have symptoms.

But in reality, health is optimum living. And that should be far away from diabetes or heart disease or arthritis or dementia or all these different things that relates, that we look upon as these are symptoms of aging.

I totally agree with you. If we don't get ahead of the curve early with proper nutrition, with supplementation, well, and with PMF therapy. But when should a person start doing PMF therapy?

When they're born. I disagree with you. Before they're born. I disagree with that too. I will agree with it, but not completely. Children don't normally need help.

Although today, these days, I'm not so sure about that. I would have said that 30 years ago, you probably don't need to help a fetus. Or 30 years ago, you probably didn't really have to help a baby unless a baby had health problems.

Because their bodies are naturally trying to grow and keep up and repair whatever has to be repaired. But certainly around age 25, that's when we start aging.

for this average person. See, to me, because we live in such a different environment now than we did 50 years ago, 100 years ago, where we are dealing with so many stressors that interfere with normal cellular function.

So even the baby, they're bathed with all these artificial EMF. They have cell towers outside. They have all these different things that are continually disrupting.

And over 200 toxins are in their bodies when they're born. Yeah, exactly. Exactly. So from my point of view, and people may disagree out there, I feel we need tools in order to be able to rebalance the electromagnetic charge and DNA function and the pulses that takes place, you know, the transport of calcium through the ion channels, the calcium channels, sodium potassium pumps that happens along the cell wall membrane.

All of these things are impacted by all the artificial EMF and cell towers. So to have a tool around you that you kind of rebalance the system, to me that should be done like ASAP.

And you have to have the right magnetic equipment. Yeah. Here's the problem that people run into. Most people make the purchasing decisions based on price or a salesperson.

So we know a lot of people will pay $6,000 for a one ghost machine. We now know that the adenosine receptor is

one of the ways that we deal with inflammation of the body.

And it's the adenosine receptor on the neutrophil. And research is showing that the optimum magnetic field intensity at the adenosine receptor is 15 Gauss.

15 Gauss. One five. Yeah. Optimal. But that's at the receptor. So if you're dealing with 15, if you have to deliver 15 Gauss deep into the brain or into a heart or into a liver, then what do you have to do?

You have to calculate the dose you need at the tissue that you're targeting. So for example, across the brain is about six inches. So we treat it across the brain.

You need about a $4,000 magnetic field to deliver 15 doubts at the other side of the brain, right? Cause magnetic fields like radiation drop off very rapidly with distance.

And again, you have to do that calculation. So buying a PMF system just based on dollars or just based on influence from a salesperson or just based on, well, I don't want to treat my elbow.

You can go ahead and just treat your elbow, but you know, if you're 65 or 70, you probably, you should be treating the rest of you too. So we make these purchasing decisions not based on the bigger picture that you and I are talking about.

So what are some, I mean obviously they should go to drpolek.com and find the appropriate things, but What are, so people understand why the products that you offer are so good.

What are some of the factors that an individual should take into account when they are looking at a PMF unit? One of the best ways to find out what you should get is in my new book, Supercharger Health, because I've got tables in there about different conditions and the different physiologic functions and which devices are gonna do the best job for that.

And there's 80 health conditions and each one I give a recommendation for a type of magnetic field therapy, not a specific specification. You can go and get your own device.

You can get it from wherever you want, as long as it's the right machine for what you're dealing with. So generally speaking, everybody should be doing whole body.

because we're talking about whole body regeneration, whole body entropy, anti-entropy therapy, whole body stimulation of stem cells, et cetera. So then you need the right piece of equipment and a minimum of 15 gauss, minimum of 15 gauss.

And then again, based on what you've got and what you're dealing with, you probably need to have more. For most of us, probably we need a minimum of probably about 4,000 gauss, most of the time.

And that's a whole body system. Yeah. And, and is there a danger? Yeah. Cause we were looking at, yeah, we want to get even to, to the heart and all these different areas in our bodies.

Is there a danger to buy then a strong unit and daily be on 4,000 gals, you know, and treat yourself every day. So the 4,000 gals that I've mentioned has more to do with the smaller applicators that are concentrated.

They concentrate the magnetic field. Okay. My body pads are not that powerful. they're probably about half the intensity because you're spreading the magnetic field around a bigger area.

So there's almost no danger. What happens, research fortunately has shown us quite a while ago, years ago, in fact, that healthy cells ignore the magnetic field.

The healthy cells say, oh, I don't need you, thank you, bye. But cells that are damaged, cells that are struggling,

that need the sodium potassium pump to be working, need the calcium and magnesium to be transiting properly, need the proteins and the nutrients get into the cells better.

Well, they are the ones that take that field and use that energy to then amp up their function. So if anything, it's wasted. It's not harmful. It's just wasted.

Yeah, yeah, beautiful, good. And what are some kind of a general direction?

Healing the Cause, Not Just the Pain

I mean, how much should a person, just for preventative medicine, anti-aging, what is kind of a good measure just to do on a daily basis? Again, that depends on the system that you have.

If you have a magnetic system that's one Gauss, you need to be doing it all day long. You need to crank that unit up. And most of the time those systems that are that weak are basically just doing acupuncture.

So one of the key actions of magnetic field therapy is to stimulate the acupuncture system. So the weak magnetic systems, all they're basically doing is stimulating the acupuncture points.

They can't heal. They can't heal deep into the body. People feel better, but you have to measure, you do measurements for healing, you don't see the results, intensity.

Then the question becomes, as we said, 5,000 biochemical, 2,000, 5,000 biochemical processes per second. How much treatment time do you need? I showed you that slide with the non-union fractures.

So that's pathology. And for those with that magnetic system that was only 18 gauss, you needed to do nine hours a day. I generally tell people that if you got the right piece of equipment, because most people have time limits anyway, time is a big problem for most people.

and the ability to do the treatment at the time that you have available. Now you could treat in a chair. It'll give you some benefit. It's not the same as laying down.

So I would say a minimum of 30 minutes twice a day. First thing in the morning to get rid of the cobwebs from the night before, right? Restoke the metabolism, get things flowing again.

And then at the end of the day, because every day we live, whether we feel stressed or not, it's a stress to live. And so you build up those stress hormones, sympathetic stress of the body typically as the day goes on.

And at the end of the day, you're going to wash that stress out of your body. and prepare your body for sleep. So if you're doing that treatment just for bedtime, hopefully it won't get jazzed up too much.

Then basically you'll fall asleep. I have trouble when I do whole body magnetic therapy. I can't read. My brain just has gotten really quiet. I just want to chill out, just totally relax.

Yeah, yeah. And I would assume if a person, you know, when they do this half an hour, twice a day, you know, to maybe, you know, drink some electrolytes and some water before, you know, to really hydrate the cells to maximize the impact then of the treatment.

Well, ideally you're hydrated before. Yeah. So it's hard to hydrate at the time that you're doing magnetic therapy, right? Because that water has to get into the cells, has to be absorbed, has to be moved out through the circulation and has to go through the kidneys and has to go someplace.

So hydration should be happening, I think, basically as a whole day process. So at the very least, maybe an hour before you do magnetic therapy. If you're going to only do it once a day, then do it an hour before.

The same thing with food. So if you eat, that food has to be broken down and metabolized, brought into the system, get into the cells, and then the cells could use it.

Well, if you do magnetic field therapy right after you eat, you haven't had time to do all that. So ideally, you need an hour or two hours after you've eaten for all that food, that nutrition to benefit you, unless you do IV therapy.

Yeah, yeah, yeah. So that's why I like our center IV therapy and the math at the same time. Right, right, right. Well, Dr. Pollack, it's such a pleasure always.

I mean, you're such a wealth of knowledge and it's such a powerful tools and powerful medicine that you're educating all this about. And thank you so much for taking this time.

My pleasure. So I want to make one final comment. You mentioned at the very beginning in the bio information, my big focus is on pain. Yes. But the focus is not on pain.

The focus is on healing. And that removes the pain. So if all I did is treat the pain, then it's going to come back. which is typically does with band-aid, right?

Ibuprofen, et cetera. So we wanna heal the cause. And this is where regenerative medicine comes in. We're trying to heal the tissue. So the pain goes away and stays away.

That's the goal, healing and regeneration. Yeah, exactly. And yeah, pain is the body's way of communicating that something is not healing appropriately.

So just by taking a medication to reduce the pain, the signal of the pain, Yeah, it doesn't take care of it's kind of like putting a little sticker on on the dashboard yeah the red light in the car and say you know something's wrong with the car, and we put a little sticker over that red light.

And now all of a sudden we don't feel the pain we don't see the pain. but the reason for that alarm signal being there is still not gone. So the key, like you're mentioning, it's not band-aid therapy, it's not symptom management, but it is to really address the reason why the body is trying to let us know that something is wrong, which is what a pain signal is.

And the symptom management has its own problem, right? 16,000 people a year die from non-steroidal anti-inflammatory gastric bleeding. 16,000, that's as many people as die from HIV.

And I know that this is the very reason you started in this, you know, seeing, yeah. So, yeah, people really need to understand the danger of pharmaceutical pain management and the importance to address the underlying reason for the pain being there.

And here you have a tool that can do that. Properly said. Thank you. You're very welcome. Thanks so much, Dr. Pollack. Thank you. Have a great day and all the best with your conference and summit.

Thank you so much. Thanks for joining me on the PEMF Effect. I hope today's conversation gave you new tools, insights, and inspiration to take control of your health.

If you enjoyed this episode, don't forget to subscribe, leave a review, and share it with someone who could benefit from PEMF therapy and holistic healing.

Your body has the power to repair, recover, and thrive. Sometimes it just needs the right charge. Until next time, stay curious, stay proactive, and keep powering up to better health.

you