Introduction to Dr. Pawluk and PEMF

– Well Dr. Pawluk I am so excited to have you on 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 the breath of knowledge and and you know I mean you you are like the PMF guy I would say so I'll just kind of read you so they understand everything that you've done.

William Pawluk medical doctors, a holistic doctor near Baltimore, previous academic positions at john Hopkins and the University of Maryland. So those aren't small institutions. Your training is an acupuncture, nutrition, herbals, energy medicine, homeopathy, hip, not hypnosis by the work and multiple other therapies considered the foremost authority on the use of post electric magnetic magnetic field therapy in short hemp in north America interested in holistic pain management which is a medically where they use that.

But it has I mean the amount of usage that 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 cause of the problem. Not simply put a Band aid on it which the pharmaceutical industry they're very good at at Band Band aid and symptom management. Most conventional treatments for pain rely on numbing and dumbing like that, that simply make the perception of pain better but don't heal the cost on the Dr. Oz show. They both agree that pain management should be focused on healing the cost after 25 years of seeing the risks and side effects of traditional health solutions and approaches and after studying various healing approaches, it discovered that PMF provide the most benefit and allowed safe nontoxic, self directed, self controlled and home pain management.

To this end, Dr. Pawluk has worked with magnetic field therapies for 30 years and established authority website drpawluk.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 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 benefit. This work is supported by over 500 scientific references so it's not just all anecdotal. I mean this is scientific that this is, this works and it's the most authoritative yet readable and unbiased book on the topic available to date to help promote healing with PMS.

He has done well over 50 radio podcast magazine and tv interviews combined. He's also been a co host of a two hour Hello 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. Pawluk.

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 report er visits that we've had in in the past that were always fun engaging. – So one of the things is that when you look about PMF and we also know, you know, E. M. F. And we try to stay away from this electromagnetic frequencies that we are exposed to all around us.

And we know how that negatively impacts our health. So then when you look at the PMF units, you know, obviously it's electricity in it. So how is that different than the E. M. F. That that we have all around us?

– So they're really fundamental differences between them. And this is a major part of confusion for people. We talk about open loop and closed loop.

PEMF vs. harmful EMF exposure

So when you do let's say wifi or you do microwaves, which is where the biggest source that we're most concerned

about, they're broadcasting the environment just like radio waves and television waves and radar.

So microwaves are broadcasting to 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 talked about frequencies with those, so E. M. S. 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 principle behind a microwave oven, Right? And when you absorb a microwave signal, what you're doing is you're heating your 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.

A P E. M. F signal pulse, electromagnetic field signal is delivered in a coil and a coil conducting current. So my thumb, for example, is the coil, there's the electric current 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 its pulse 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 out and collapse. It never leaves the source, it goes out, but it doesn't leave the source.

It's tethered to the 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 P.

M. F. And E. M. S. The M as we were concerned about and the PMS that are designed for therapeutic purposes. – So the micro current then, I mean you talk about it, 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 it vibrates, the more heat that would would generate. I mean the faster the frequency.

So what kind of because that that is in addition to the heat, there are other damaging effects on the tissue as well. Right? It cannot impact your your genetics.

It can impact your mitochondria that can impact there's so many damaging effects and all of that aspect. – Well they are and that's the problem is we can't 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 the cell phone to your ear.

You see this, I see this regularly hold the cell phone to the ear. The cellphone, the ear becomes red. You 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 microbes are going through the head because they don't they're absorbed very shallow very shallow way. So the other here heats up to by reflex responses. So if I heat my hands I put my hand over a hot stove. It'll turn red in response to the heat.

My other hand will turn red to not to the same extent as the hand directly to the heat. Because 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 it's local and it's the heat. It's genetics it disrupts genetic bonds.

It disrupts molecular bonds. It agitates molecules get 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 to tell medicine and he he's working with the cell phone they in and day out and lo and behold now he has an aroma around his auditory nerve.

So exactly sitting like like this you know with the cell phone typing in orders. You know that that he was doing. And so now he has an aroma. So his options are surgery which will then remove the tumor but he won't be able here again or radiation same thing.

It would control the tumor but it won't be able to hear again. And so so it's just kind of seeing the damaging effect the the impact that has in your D.

N. A. You know those those microwave frequencies. But then looking down at that the P. M. F. You know is that something that can correct that? Or I mean how is that beneficial?

How I mean 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 P. E. M. F. S.

Have been found to be extraordinarily safe. Extraordinarily safe. We now use something called R. T. M. S. It's very common. So magnetic pulse magnetic fields have been approved by the FDA for a number of uses.

One of the more recent approvals has been for device is called our tMS repetitive transcranial magnetic stimulation for treating treatment resistant depression right?

These are high powered magnetic fields $8000 6000 dollars applied to the to the brain. And so what happens is they what they actually do is they put the coil right over the motor cortex. The part of the motor cortex that controls the thumb of the hand.

On the other side. They crank up the magnetic field intensity until you get a deep polarization 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 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 E. C. T. Electroconvulsive therapy.

So it's considered very safe. And literally 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.

How PEMF supports healing and regeneration

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 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 maps and all you know all these different devices because that that is obviously common concern and I just want to kind of make people understand that there's there's no kind of E. M. F. Danger because of there's 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 you know within the body – When I was the Vice president for medical affairs for the Vice president of 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 E. M. S. And PEMF's And what the differences in terms of what they do. Again, the consensus, clearly the consensus is that PEMF's are safe.

– So what does E. M. F. Do in the body? I mean what I'm not E. M. F. What does PMF do in the body? What what are some of the regenerative aspects that that pen do in the body in that we because it's something that we should use on a daily basis.

And it's really beneficial for anti aging for a generation regeneration of any kind of tissue. – Absolutely. So the principle behind the way PEMF's work in the body is that you have a pulse. 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 is the induction of current in the body. So we actually induce currents, we induce charge, increased charge in the body With that every single pulse.

Does that now then what happens? What happened? What does that pulse do by increasing increasing charge in the body is 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 there's 25 different actions. One of the things we've discovered more recently with PMS is they actually have an endocannabinoid benefits. So that's like taking marijuana, cannabis or CBD PMS have that action.

So there are receptors in the body that that take that CBD or cannabis and basically start producing metabolic changes as as a result of that receptor being stimulated by the cannabis. Well, PMS actually directly stimulate the cannabis receptors. 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. Its direct stimulation of the cannabinoid receptors primarily in the nervous system.

But anywhere in the body. But the one thing that's been studied so far has been the nervous system. – And so looking at aging for instance, I mean you 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 are huge when you want to reduce aging and be vital when you deal with aches and pains all over the place your your brain is not functioning the way that you that it used to or energy is not at the same optimal level. So including PMF, that would that would kind of maximize your your anti aging potential – Totally. In fact, actually, if you don't mind um if I could share a couple of slides, – Yeah, I would love to please.

– All right. So we talk in terms of Alright, share a screen. You have to allow me to share a screen. – That here. – Okay, thank you. I'll let you let you have it back. You're so kind.

Thank you, Michael. Okay, so share screen let's go ahead. So here's a slide that I want to show you about some of the effects of PMS basically what they do.

One of the most important benefits of PM, 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 the cell, whether it's radiation or heat or cold or or trauma cutting it, burning, it anything that damages the cell causes certain a certain sequence of changes in the cell that are that are damaged and 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 the point of death and basically the changes can be reversed.

And as the it becomes more and more damaged cell function decrease until it gets it gets to a point where it comes 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, etcetera. 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 look at the 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 mechanism necrosis or apoptosis. So necrosis happens when there's damage usually external damage.

But it could be internal damage to where you have an infection that you have swelling of the cells and and mop membrane blobs etcetera. And 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, right? It goes through an evolution process where also fragments and then you have a product bodies and then faga sites 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 um decreased a teepee in the cells. Pericardial damage, the changes in the flux of calcium in and out of cells which causes build up of energy on the outside of the cells. So the cells compromised, they can't function properly, reactive oxygen species that cause damage oxidative stress damage. All of this also ends up with membrane damage which then goes can be result in like normal membrane liposomes are basically eat up cells or they break down the cells and then they eat them up and protein misfolding.

So these are all the consequences of cell damage and self injury turns out PMF affect each one of these actions. They don't do it all at once necessarily the body will decide how it wants to do with that cell injury.

And that damage. So that what happens is that all of this ends up with cell damage. That 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 if 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.

Cell injury, tissue repair, and regeneration examples

So we convinced the father to have the surgeon. So 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 no vascular supply whatsoever.

It's essentially dead. So that child did a local PEMF therapy device to the thumb an hour to an hour and a half a day. So this is when it started started PEMF therapy.

They're the PEMF therapy for three weeks on august the sixth started on the 12. Now look at that, it's reattached,

it's regrowing regenerating into the area of the damage. 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 scab left of that dead tissue that the body is going to get rid of. Now. This is about 12 weeks.

So from September 12 July 12 to October the second, almost 12 weeks. Look at that, she's regrowing her now. – That's incredible. And it's just I mean because it's a very visual I mean you can really see how dead tissue, you know how it becomes alive and how the programming of the body because the programming is a healthy thumb. And so we're seeing it on the thumb, but we know exactly this happens in the brain, in the liver and the kidney in the joint. You know, it's the same kind of process, right? – Whatever tissue, whatever regenerative capacity that tissue has. So that so and every tissue of the body has different regenerative capacity right? In 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 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 the 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 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 – Those other studies he was doing is that they're cutting off the tail and then using electrical stimulation and and then that will then regrow the tail. So. – Exactly.

– Yeah. It just shows if the body has that capacity by the proper stimulation which is what pam will then supply. You can then regenerate. – And PEMF increased voltage of the tissues. And I said the increased charge and it's a charge induction the increased charge in the tissue that does 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 how they regenerate. So liver cells are replaced every 3 to 500 days. Intercostal between the muscle cells in between the ribs regenerate every 15 years. The wisdom tooth stops Going 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 the body cells of the body. Most of the cells of the body have a capacity for generation at some level. But all the tissues are different.

So you can't expect the skin wound is gonna heal a lot faster than a brain wound, right? Because of the regenerative cycles of the of the tissues themselves.

Heart muscle cells stop growing at age, 10 years of age. Red cells replaced every 120 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 factors.

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

Some people are selling peanuts systems. All you need is eight minutes a day. Right? So this is this is research done on nonunion fracture. Talk about regeneration.

So these are factors 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 gonna heal. Typically they remain non union.

And then you have a nonfunctional extremity and they most commonly happen in the in the upper extremities, the hands, in the tibia and fibula. Those are the major areas where these happen. So what they did is they the FDA approved the device that's about 18 gauss. So 18 is a very low intensity magnetic field and they wear 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. – Just shows because the cell is always functioning.

I mean it has how many how many chemical reactions it doesn't have per second. It's like 2000 different chemicals. Yeah, that's every second. So it's not like the cell just you know, I'm going to take the day off. You know, it's working all the time.

So that's why you know that continual supply of PEMF 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 to replace the damaged tissues. So in this case the people who did nine hours a day, he'll 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 factors. So if you don't do what you need to do, you're just not gonna heal fast enough.

So we have this a 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 the swamp. So the PEMF effects of PEMF on stem cells is to increase proliferation. They increase viability, they increase cardiac markers, neurogenesis 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, this is like the number one killer. So exposing yourself than to continual PMF treatment will then impact then all your cardiac markers and also regenerate the heart muscle and faster you get no regenerative.

So now we're looking at all the M. S. We get dementia. All Alzheimer Parkinson's Austria genic. I mean who does you know who out there? Especially all the females. They're all nervous about osteoporosis, osteopenia and chrono genic arthritis, rheumatoid arthritis.

So it hits like all the spots that relates to aging. Just using the PEMF. – Just using the PEMF. So to go back to the point you're making about the fact that we have 12,000 biochemical processes per second.

How much treatment time do you need And I said I don't know your body's gonna tell you right. So if you apply it long enough fortunately with with PEMF's 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 and or B. You got equipment in your body. That's that's at risk with the magnetic stimulation. So beyond that it's almost impossible to do damage in the body. At PEMF's I've discovered don't cause problems.

They reveal problems. Right? So what you're trying to do with PMF therapy when you're talking about 5000 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 you know cleaned out because we can't choke up the cells tissues with cells that are not functioning properly.

I think we can stop sharing here. So let me stop sharing and you can have your your control back. – You're so sweet. You gave it back to me. – I stopped sharing I assume you can take it back – I assume so soon.

Well so then we have and we look at kind of that that that cell damage theory. And in regard to aging we have this term called inflame 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 in a home, you know, if we want to have a nice home free from infections and all these kind of things, we can't continually need to clean out old junk and then we we need to support, you know, support the health sort of say of of the house.

So it's the same in the body.

Stem cells, growth factors, and anti-aging

We continually need to clean out old in order to be able to replace it with a new if we don't get rid of the old, you know, we can't put new things in and so now we have tissue, whether it's joints, 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 going to impede the function and also impede the integrity of that tissue.

– An age related memory loss even to some extent. Alzheimers. So Alzheimers process leads to beta protein being deposited before it gets to neuro february tangles before it gets the plaque. So if you can clean house constantly be cleaning house. They don't they don't build up.

– Yeah. And then if if it goes all the way to complete dysfunction, then we look at cells becoming cancerous, you know, as a survival mechanism and and and now they are then secreted chemicals that are protecting their own existence. And I from what I know PEMF is is even beneficial in that in controlling all those kind of cited kinds and chemicals that cancer secretes for their own survival.

– And so they bring in new cells will bring in healthy cells that help the immune system to clean things up. They also help the immune system to isolate the cancer. So what happens in magnetic field therapy doesn't necessarily kill the cancer, Although that's that's a that's a possibility.

We don't have really great proof that that that's true but what what you can isolate it and if you can isolate you to 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, if you're looking at the mitochondria and there you have the electron transport chain transport chain and and that we depending on the flow of electrons.

And so obviously if we then support, you know using pump, we can then support that flow which will increase freeze 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 death switch to see this cell is is too old.

Let's flip the switch, let's kill it off or you know, this cell is salvageable and then it would have the energy to be able to to regenerate and repair.

And so PEMF can support that as well. – Well, you know, 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 PEMF's do not initiate cancer process. The only thing that the PEMF might be able to do to cancer is by increasing blood supply usually temporarily because we 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 can styles with with reactive auction. So it's always 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 in veloute. – And I know the mitochondria says it is dysfunctional and the cancer, it only operates within within a very narrow band.

So if you push then the mitochondria and and activate, you know, so it works harder then it starts to leak out a lot of reactive oxygen species into the cell to cause then cell death. So kind of trigger the death of that cancer cell. So yeah, they 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, 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 uh increasing option species or inflammation reduction or 80p 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 does what 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 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 metal 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 with a lot of processes that the body kicks in. You know, maybe too much chemicals may be 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 and see how the body is 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 bodies were pushing the body were essentially training the body how it should act with more energy. So I said, I've been 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 in a swamp? I mean, I know with PEMF, I mean, you're you're bringing in energy, but I would assume also you need to support a lot of the kind of the deliver the kidneys and then all the detox process is, I would assume also you would need to bring in electrolytes because you you need to have something to act on with the PEMF.

And and so can you expand a little bit more on on that? – Well, let's use the analogy of a swamp, right? You're gonna clear the swamp, you're gonna try to grow corn.

So what do you have to do? You have to drain the swamp, right? But now you're then you're gonna have to plant, but you're gonna get rid of the weeds you're gonna have to do a lot of other, take a lot of other step. So finally you can start growing a crop in that swamp and that what used to be a swamp. Well in the body the swamp is edema inflammation right? All those are the elements of a swamp, lack of blood supply. So now there was 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 but 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 swamp I put stem cells into an area of inflammation. One of the functions that stem cells can have is to clear inflammation. But then they've done their job, they're not there, 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 swamp then you start growing. So magnetic field therapy then increases the different proliferation First of the stem cells so they now grow and then they differentiate better. But if you differentiated say bone cells you said or like we talked about the non union fractures.

So you increase bone cells but you don't have enough calcium, you don't have enough magnesium or Bohr on. You don't have all the elements that you need to make new bone. So then what PEMF's 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 p enough therapy with stem cells for the heart, cardio cardiogenic stem cells. They their survival rates are terrible. So if we were doing PEMF therapy to the heart before we tried to do stem cells for the heart, the heart's already were 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 are supposed to survive and they're supposed to do their work they work hard.

Cardiac cardio myo sites work hard and they need to be able to survive. So they need more energy. They need to be able to have the proper environment to work within. That's that's the spectrum of what PMS can do with that. – So you kind of it Dema and you have so you have this kind of the swamp environment in the tissue and obviously to drain the swamp, you need circulations. You need things to move and PEMF will help with that movement with the circulation and also it will help to reduce the inflammation in that area because when when you have inflammation.

Yeah you have the demon you have immune system cells are secreting cytokines that create that area swole. Make that area swollen, you know so you know the will help control that and then you then can then support them the detox pathways you know using your eliminate eliminate ori your bowel, your kidney, you know skin lung liver you know supporting your your ability to eliminate that as you're also increasing the flow uh 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 the PEMF to really kind of support that that whole whole process. I mean that that seems to be kind of like a winning formula then if you want to add things like peptides and stem cells and you know all of these things but you 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 like again with bone cells, if you don't give the new supply the nutrients for the bone cells, the minerals for the bone cells to be able to to mineralized.

If you will right then you're not gonna have adequate bone, you're gonna have soft bone and then you're not a whole lot better off than you were before.

So magnetic therapy open 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 the house a stale house, right open the windows and doors, air gets in and stale stuff gets out. – Yeah. Yeah it's kind of like like nightingale.

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

So can you go through a little bit more kind of in regard to the stem cells? You know because stem cells and peptides. I mean we use these as as growth factors and all the different ways that that 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're just gonna 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 did they do to these stem cells? – Okay so let's back up a little bit. There was a study done by Nasa on neural stem cells.

So they're using a magnetic field that was about 10, around 10 hertz. And about maybe around 100 kaos. 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 neural progenitor cells. 400%. But they also what they also did.

And I was amazed at this. They also looked at those stem cells and and the growth factors they were producing, they were producing around 400 growth factors honoring with 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 go all the stem cells you want. But if you don't have the growth factors to support them. And then in regenerative medicine, we supply growth factors as well to help the the regeneration process work better.

Well enough stimulate tons of growth factors at the same time as a 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.

Aging, inflammation, and the importance of whole-body therapy

We had a case a situation where a woman was going to go and have a bone marrow uh, 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 wherever tissue is being stimulated, that's the value of 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 factors 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 sell But also it's also like you're mentioning the the growth factors.

I mean it and they secrete that it's like a a pharmacist in itself that the stem cells are and they go to the location they check the location C up. I see that these growth factors are needed. These chemicals are needed and then they just create this this this magic soup that is needed exactly for that tissue.

So whatever a person can do that 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 you maybe you got a fatty liver or your g fr your kidney function are starting to creep down towards 60 or maybe even below, you know all these things that are are become then crew and as you said you you have that window of opportunity that you can then support the organs you know while they are the the cells are damaged but they're not dead, you know? And so you want to get get to it as quickly as possible you know before you have the cells being dead.

Yeah. Yeah exactly. So looking at aging I mean how how do you describe aging? I mean what what are the processes? I mean we talked about inflammation.

We talked about uh yeah how what is the definition of aging? – 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 of anti aging basically write some essence. 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 with, you know, 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 1000 cuts. Right. As a physician, it's all the all the stressors that you have in your lifespan, right? It cause changes in your body's ability to repair and recover. Right?

So if we could we would stay 25 years old for the rest of our lives. Right? That's our optimum. We stopped growing at around 25, right? 24, 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. – Yeah. Right. So what happens though is that that's not what happens, aging happens. Sin essence happens.

Poor diets happened stressors happen – And tells in essence, I mean I I know we use the term but there may be people that have no idea what's in essence mean – Aging that means the cell the cell gets old.

So it's like a house. You mentioned this before. You got a house, you built its 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 as the furniture ages 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 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 a. T. P mitochondria, the number of mitochondria decrease. So you have all these factors that happen as you get older anyway because of entropy. Now can you, can we ever keep up with our entropic needs?

– That's a good question. We would like to, 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 that that and people live longer but they are not necessarily living healthier. They they're not living a good life.

The quality of life is actually it gets worse faster. But we live longer in a bad state, you know. So it's almost like pharmaceutically they have a bigger window to, you know, to sell medication to people.

– I yes, that's true. I tell people it's about getting off the edge of the cliff. Right? So what we do medically, you have, I have heart disease, 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 got 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 stents 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 have to change the factors, so you don't keep going down that slope that you are on. You want to get that slope higher up, but you're not going to reverse the damage that you already caused.

You already bone on bone, then all you have to do is find a way to live with it, – But but if you can get it, get at that earlier, like we're talking about, you know, 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 you're gonna be away from that cliff, you're gonna have a larger buffer zone because we, you know, 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 and that should be far away from diabetes or heart disease or arthritis or dementia or all these different things that that relates, you know, that we look upon as you know, 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 PEMF therapy, but when should the person start doing PEMF therapy, I disagree with you, 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 days, 30 years ago, you probably didn't really help have to have help a baby Unless the 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 the average person mm CC. – To me because we 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. You know?

So even the baby, they're they're bathed with all these artificially EMF. They have cell towers outside. They have all these diff and things that are continually disrupting – Their bodies when they're born.

– Yeah. Exactly. Exactly. So from my point of view and then people may disagree out there. I feel we need tools in order to be able to rebalance the electromagnetic charge and and D. N. A.

Function. And that the pulses that takes place. You know the eye on you know the transport of calcium you know through the the ion channels the calcium channels, the sodium potassium pumps.

That happens along you know the cell wall membrane. All of these things are impacted by all the artificial E. M. F. And you know 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. So 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 dentist in receptor is one of the ways that we deal with inflammation in the body and the dentist in receptor on the neutrophils.

And research is showing that the optimal magnetic field intensity at the dentist receptors 15 Gauss 15 optimal. But that's at the receptor. So if you're dealing with 15 you have to deliver 15 goes deep into the brain or into a heart or into a liver.

Then what 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 6". So you treated across the brain you need about a $4000 magnetic field to deliver 15 ghosts at the other side of the brain. Right?

Because 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 what I really 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 should be treated the rest of you too. Right? So we make we make these purchasing decisions not based on the bigger picture that were that you and I are talking about?

– So what are some I mean obviously they should go to drpawluk.com and find they find the appropriate things but what are so so people understand why the products that you offer are are so good. What are some of the factors that an individual's are taking into account? You know when they are looking at a a PEMF unit?

– One of the best ways to find out what you should get is in my new book Supercharge your health because I've got tables in there about different conditions and the different physiologic functions at which devices are going to do the best job for that And there's 80 health conditions and each one I give a recommendation for the type of magnetic field therapy, not a specification. You go get your own device, you get it from wherever you want as long as it's the right machine for you for what you're dealing with. So generally speaking everybody should be doing whole body right? Because we're talking about whole body regeneration, whole body entropy anti entropy therapy, whole body stimulation of stem cells etc. So then you need the right piece of equipment and a minimum of 15 goes minimum of

15 ghosts.

Choosing the right PEMF device and treatment routine

And then again based on what you've got what you're dealing with, you probably need to have more for most of us. Probably we need a minimum of probably about 4000 costs most of the time.

And that's a whole body system. – Yeah. And is there a danger because we're looking at, you know, we want to get even two to the heart and all these different areas in our bodies. Is there a danger to by then a strong unit and daily be on 4000 gals, you know, and treat yourself every day.

– So the $4,000 that I mentioned has more to do with the smaller applicators that are concentrated. They concentrate the magnetic field. More body pads are not that powerful.

They're they're probably about half the intensive 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 ignored the magnetic field, the healthy cells say, oh I don't need you, thank you, bye. But but cells that are damaged cells that are struggling that need the sodium potassium pump to be working.

Need the calcium and magnesium be transiting property, need the proteins and nutrients get into the cells better. Well, they are the ones that take that field and use that energy to then amp up their their function.

So if it's if anything it's wasted, it's not harmful. It's just wasted. – Yeah. Beautiful. Good. And what are some kind of a general direction. I mean, how 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 kaos, you need to be doing it all day long. Yeah. Yeah. 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 to stimulate the acupuncture system. So the weak magnetic systems all are 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 then the question becomes, as we said, 5000 by 2000 5000 biochemical processes per second.

How much treatment time do you need? Right. 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.

You need to do nine hours a day. I generally tell people if you got the right piece of equipment because most people have time limits anyway. Time is a big, big problem for most people and the ability to to do the treatment at the time that you have have available now, you can 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? Re stoke 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 in the body, typically as the day goes on and that at the end of the day, you're gonna wash that stress out of your body and prepare your body for sleep.

So if you're doing that treatment just before bedtime, hopefully it will 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 it's gotten really quiet. I just want to chill out, just totally relax.

– 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 and before, you know, to really hydrate the cells to maximize the impact of the of the treatment.

– Well, ideally you're hydrated before. 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 as 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 the 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, they do it an hour before the same thing with food.

So if you eat that food has to be broken down and uh metabolized brought into the system, get into the cells and then the cells can use it. But if you do make that feel therapy right after you eat, you haven't had time to do all that.

So ideally it in an hour or two hours after you've eaten for for all that food that nutrition to benefit you unless you do I. V. Therapy. – Yeah. Yeah. Yeah. So that that's why I like our santa I.

Healing the cause, not just the pain

V. Therapy and the math at the same time that, – Right. Right. – Well Dr. Pawluk it's it's such a pleasure always. I mean you're you're you're such a wealth of knowledge and it's such a powerful, powerful tools and powerful medicine that that you you're educating all all this about so 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 focuses on pain. – Yes. – But the focus is not on pain.

The focus the focus is on healing and that removes the pain. So if all I did was treat the pain then you know, it's gonna come back, which is typically does with band AIDS, right, et cetera.

So we want to 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, pain is the body's way of communicating that something is not healing appropriately. So, just by taking a medication to reduce the pain, you know, the signal of the pain, you know, doesn't take care of it.

It's kind of like putting a little sticker on on the dashboard, you know, 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 just 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 have died from HIV – And I know that this is this is the very reason you started in this, you know, seeing, you know, so, uh, 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 – Property set. Thank you – Very welcome.

Thanks so much, Doctor. – Thank you have a great day and all the best with your conference in the summit. – Thank you so much.