

Dave:

You're listening to Bulletproof Radio with Dave Asprey. Today's cool fact of the day is that just like Google can add more servers to their network whenever they want to, your brain can do the same thing. I can produce new cells throughout your lifetime so that means that brain degeneration isn't inevitable, but it also means that you can get an upgrade now. New neurons can be created at any age through this concept of neuroplasticity. It just takes a little bit more conscious planning to keep doing this when you're older than when you're younger.

The stuff we believed 25 years ago that you have as many brain cells as you're born with was, I think, total bunk, would be the right way to describe it. One of the primary drivers of your ability to add new brain cells is mitochondria and my new book HEAD STRONG and if you're watching it on video, I'm holding it up in the most amazingly commercial posture ever, is all about mitochondria and what you can do specifically for mitochondria in your brain and in the rest of your body.

If you're watching on video, you would see these guns which are ridiculous because I've put on about 35 pounds of muscle in my quest to raise my mitochondrial count in the last 2 months. It was an accident. I didn't mean to do it and I had to buy new shirts. Apologies. Yes, I used some research chemicals that are not in the book, but they're all on the blog because I tell you guys all the crazy crap that I do.

Today's interview is going to be a lot of fun. In fact, you're going to learn something about pulsed electromagnetic frequencies. But before you do that, will you take 5 seconds, go to iTunes and give Bulletproof Radio a 5-star review. This helps other people find it and since today's episode is really cool, it's one of those in-person live interviews instead of something that I'm doing over Skype. The team came up here to the studios. If you decide to watch on YouTube, go to bulletproof.com/YouTube and they'll take you directly to our channel. You can watch this live which is kind of cool. As usual, you'll be able to get the transcripts for free on the Bulletproof website, so say "thanks" by leaving us a 5-star review or even better yet, go to orderheadstrong.com, pick up a copy of the new book. It has so much of this information from hundreds of episodes of Bulletproof Radio all compressed into a single really about a 4- or 5-hour read.

Today's guests are Gary Volino of a company called Pulse Centers and Gary Ryan who's a medical professional and a competitive swimmer. Pulse Centers makes a new pulsed electromagnetic frequency device. These are guys who were at the Bulletproof conference and I've added their very high-end medical grade gear to my labs up here at my house. These are magnetic fields that pulse really rapidly so much that you can actually feel it and you can see your muscles jumping which is completely ridiculous.

This is cool because I get to ask basically see you have a company whose bringing this commercial technology to market, commercializing whatever the heck I'm trying to say, as well as someone who's using it in clinical practice and for his own exercise performance. Kind of a cool both sides of this. The user, the medical side and the business side all together, because this is how disruption happens and these guys are absolutely disrupting things by bringing this technology and it has systemic level effects that go across everything.

Welcome Gary No. 1 and Gary No. 2.

Gary Volino: Thanks, Dave.

Gary Ryan: Thank you.

Gary Volino: Appreciate it.

Dave: Alright. Let's start out here and I'm going to ask Gary Ryan, our medical side of things and exercise side of things, what is pulse electromagnetic frequency? Why do we use that stuff?

Gary Ryan: Great question and a very simple and easy explanation would be to go to our basic unit. Mentally and spiritually we are what we are. Physically we are a pile. A healthy or an unhealthy pile of cells. All cells operate the same way. In essence, they're batteries. When we look at a cell when we're 20 years old, the circumference of the cell whether it's a brain cell, a liver cell, a lung cell are big, fat round healthy grapes and those grapes are plump and moist. At age 20 we can basically do anything with those things. We can fall down a cliff, the next day we feel great. We get sick, we recover almost instantaneously. As we age, for a multitude of reasons, stress, toxicity, traumas, the cells begin to lose charge and the mitochondria begin to slow down. The cells rather than looking like big fat grapes, they begin to look more like raisins.

When we're looking at pulsed electromagnetic frequency, the acronym PEMF, what we're looking at is highly charged electronic particles that are penetrating the cell and bringing those cells back to a more normal charge.

Dave: Now mitochondria are a particular fetish of mine and what you're saying there about us being a pile is something that really became clear as I was writing Head Strong where you have a quadrillion mitochondrial, about 10% of your body weight and their job is to make high energy particles, these electrons that they make from food and to a small extent from light and they use oxygen and all of that, what is changing magnetic fields have to do with that?

Gary Ryan: The strength of the magnetic field has to do with how the mitochondria's going to function.

Dave: Why?

Gary Ryan: That's your basic.

That's a good question.

Dave: Is that something that you get into with the medical practice or the other Gary, something that you want to talk about?

Gary Volino: Yeah, sure. Let me just take a step back on the definition of pulse electromagnetic field.

Dave: Sure.

Gary Volino: I think it'll help. There's a lot of controversy about electromagnetic fields to begin with.

Dave: Mm-hmm (affirmative)

Gary Volino: As you can tell, I'm not the health guy. Gary's the health guy. Look at him. He's much healthier than me.

What I am is more the business side of pulse electromagnetic fields and I got involved in pulse electromagnetic fields therapy about a year and a half ago. What happened to me was I hurt my back and I went to a chiropractor and he happened to have one of these machines by Pulse Centers. It worked wonders for the pain in my back so I was very curious in what it did. Just so happened it was made out of Atlanta, Georgia. I live in Atlanta, Georgia, so I started researching electromagnetic fields and the Pulse Centers company.

After a few months of doing that, I gave my father a system and he benefited from the electromagnetic field therapy as well. Now, the way we position the product, it's cellular exercise. We position this as an exercise system and when it comes to PEMF, pulse electromagnetic field has been around for millions of years. The Earth is a huge generator of electromagnetic fields, so I think it's important to realize what we're doing is the good side of electromagnetic fields. We're simulating that electromagnetic field that comes from the Earth. That pulsing, it's called the Schumann Resonance as a matter of fact, that Schumann Resonance happens 7.8 times a second. It's where the magnetic field is pulsing and that pulse happens because this high-voltage lightning is hitting the Earth, causing the core to go out to the poles and create the electromagnetic field. Everybody knows there's an electromagnetic field because of the compass. You point it north, right? That's all because of an electromagnetic field.

Our electromagnetic fields operate on more of that low-end frequency as opposed to cell towers and power lines which operate on a high-end frequency. What we're really doing at the end of the day is we're providing that energy. There's light energy, lasers. There's electrical energy, you plug your toaster in,

it's causing electrical energy. Harmful EMF's come out of that, but that's operating on a completely different frequency.

What we're trying to do and what we've succeeded to do is bring that electromagnetic field that's good from the Earth-based electromagnetic field back into the body. What Gary's saying is that energy that we're bringing into the body is causing what he's seeing in his practice day in/day out a difference in what the cells do

Dave: Now the Schumann Resonance is something that some listeners may have heard of and like you're saying, lightning strikes, it reverberates between the ionosphere and the surface of the Earth and because of the height of the ionosphere, you end up getting this reverberating 7.8 Hz which is sort of the timing signal of the planet.

There's arguments, ones I believe actually that say if we didn't have that, we'd probably wouldn't have evolved as a species. It's fundamental to life on Earth. We know, in fact I write a lot about this in Head Strong, mitochondria are semi-conductive. They're sensitive to electrical fields and for anyone who just doesn't believe that, I just have to tell you this, when you take one of the Pulse Center devices and you put it on your body, it's just a magnet. Your body goes "ching ching". You're muscles twitch. That would be evidence that we're sensitive. You cannot argue with this.

Gary Ryan: Right.

Dave: Obviously, you can but it just makes you a dufus. At a certain point you have to be willfully ignorant.

Now you could say that there's no harm caused by electromagnetic frequencies and there's debate about that. I think that there's plenty of evidence of harm from certain frequencies because it's not about are magnets good for you or bad for you. In fact you could argue what magnet is placed where whether it's a constant field or a pulsing field and then how frequently does it pulse? How strong is it? Those are just basic variables. Also what time of day should you have electromagnetic frequencies pulse? That probably matters as well. There's all kinds of variables, but to say they have no effect, would be like denying gravity at this point. Do you guys agree with that?

Gary Ryan: I agree. Absolutely.

Gary Volino: Absolutely. Science has proven time and time again that these electromagnetic fields that the Earth is pulsating, it is beneficial for life.

Dave: Now something I haven't talked about, I don't think ever here. About almost 20 years ago when I was looking at every possible technology that I was going to upgrade myself. Granted I didn't like being fat. I didn't like being tired all the

time. I was having problems with cognitive function, so I put a Schumann Resonance generator in my house that made a 7.8 Hz electromagnetic field so that even though I was exposed to lots of we'll call it electro smog, that there's a timing signal that my body can resonant to. It's a low power field but that's been running for 20 years in my house. It seems like I plugged it once. Every time I moved I plugged it in again. Almost no work involved and the odds of it causing harm were about zero because if electrical fields don't do anything then it's harmless and if they do do something, this is the one that was present always anyway so I might as well strengthen that field.

That was a harm or risk reduction strategy and what we're doing with the Pulse Center's gear here is you can lay on this mat with a very strong Schumann Resonance or a different frequencies on it going up to 9.9 pulses per second.

Gary Volino: Correct.

Dave: You definitely feel stuff happening. It's a very powerful form of exercise. In fact, you can get tired from it. You can also get really energized from doing. Since our mitochondria were ancient bacteria that have always been tuned in to the Schumann Resonance of the Earth and are electrically sensitive, I would say beyond any shadow of a doubt at this point, just because you can see the effects. How do you know with the Pulse Center's gear that you're using the right frequencies or that it works? What results do you see?

Gary Volino: From a results standpoint I'll Gary speak to that because he practices it every day. Again, I'm on the business side of it

Dave: Sure

Gary Volino: Plus I receive letters and emails from plenty of our customers showing and telling me the effects. What we believe in is the anecdotal, if you will, effects of it that we see every day. Those range from sleeplessness is going away, so people are sleeping better. Inflammation is down, so people report they're no longer inflamed which I think in 2001 Time Magazine had on the cover of their magazine as the silent killer, inflammation.

We know that the Schumann effect is good. We know that these low-end frequencies are good for our body from science. You have plenty of scientists, Ph.Ds, Harold Bird, Jerry Tenant that have studied this and reported the effects of these low frequencies high intensities. Steven Beebe, as a matter of fact, from Old Dominion University wrote an excellent paper around short bursts of energy entering the body through electromagnetic fields. All of this has been studied and for many, many years. Remember electromagnetic fields go back to Nikola Tesla.

Dave: Oh, yeah.

Gary Volino: People know Tesla mostly for the car company nowadays, but Tesla was really the founder of electromagnetic fields.

Dave: He was into vibration of all sorts. The first whole body vibration platforms were actually made by Tesla as well. I make the Bulletproof vibe now. This all came out of this guy who was really obsessed with vibrations of all forms.

Gary Volino: That's correct. Yeah.

Dave: Now when you get into the magnetic frequencies here, one of the things that attracted me to want to play with your technology is that you're using a power supply that's basically out of a stealth airplane. It's basically a radar control system level thing because one of the problems we have is that you need a lot of power to make a high powered EMF or high powered pulsed EMF, so you'd be able to turn power on and off. You imagine you're flicking your light switch. On/off, on/off, on/off. You can't really do that 10 times a second and if you did, the switch would break really quickly, so what the Pulse Center's device does which is kind of cool is you're using the things used to control radar systems for electronic countermeasures from airplanes which I thought was kind of cool. That lets it have this really powerful pulse that happens really, really frequently.

Why does the strength, why do you need that much power in order to get the effect because there's 9 volt battery powered things out there all over the place?

Gary Volino: Yeah there are and they're only going to go skin deep. We're trying to effect the cells and the organ systems.

Dave: Well, you definitely feel it in your organs. That's for sure.

Gary Volino: Yeah. We created accessories so you can put the magnetic field on the front and the back so it pulls it all the way through your body so if you're working on the liver, for example, you can put a paddle, one of our accessories on the front and the back of your liver and then you can feel it all the way through your liver.

In order to make that happen, you're going to have to use a higher intensity system. All EMF's in the range that we're talking about and the amount and even this is where we talk about gouse with the intensities, so even the low-end gouse systems are good for you. They're going to help your skin, but they're not going to make the dramatic effects that a high-intensity system will make, a higher gouse system.

Dave: I've talked about some of the low-end ones on the blog even 5, 6 years ago and I've had devices going back 15 plus years, but they're subtle effects and the Pulse Center stuff is not subtle at all. In fact, if you turn it up all the way, a lot of people can't sit on it. It's too strong.

Gary Volino: But what you're noticing is a breakthrough in our technology. The older systems were Spart Gap systems and we still have some Spart Gap systems. They're great systems. We call them mechanical.

Now, with our newer technology which is what you have, is the digital technology. It's digitally controlled pulse. We're very scientific with the pulse and you mentioned some of the military instruments or components in the system. That's what we've done. We've created a military-grade system that was designed to last 80 years. When engineers asked us how long do you want this to last, we said a human's lifetime, 80 years.

Dave: People are wondering, "alright there's this cool new military-grade PMF tech, how do I try it?" I'm just going to be really straightforward with you guys, this stuff is expensive. It's meant to be at your doctor's office, right now anyway.

Gary Volino: Absolutely.

Dave: So the way you can try this ... You guys have a location in ... I didn't actually check before the show, your Pulse Center's location in Atlanta, at least that people can go in and try it?

Gary Volino: Oh, yeah. In Atlanta, but they're all throughout the United States. We have some worldwide.

Dave: So globally, there's practitioners who have these and you have finder, I'm guessing on your website?

Gary Volino: There's a locator on our website.

Dave: Pulsecenters.com?

Gary Volino: Pulsecenters.com.

Dave: So if you want to try this out at a local place, you can try it out and it's sort of like you might go somewhere and get a massage or any sort of other acupuncture or something like that. You go to a chiropractor, a sports therapist, a doctor. There's probably some doctors treating ...

Gary Volino: Functional medicine doctors.

Dave: Okay. Functional medicine doctors.

Gary Volino: [crosstalk 00:17:35] medicine doctors.

Dave: Okay. You go there and say I want to try this stuff out.

I actually tried one of your machines about, I want to say, 4 years ago. I was having some problems with my right elbow and so I actually had some Prolosone injected and then did some high-powered EMF and I'm pretty sure it was one of your machines, it was a very high-powered one. It looked just like yours, so it must have been. Anyhow, I definitely noticed some results from that, but I figured I probably won't end up getting one of these things.

When we met at the Bulletproof conference, and then we got to meet again at Aforum. ACAM is the American Academy of Anti-aging Medicine, I was "This is really noticeable. It's a different level than anything I've experienced." I decided I wanted to add it to my arsenal of things here.

Gary Volino: Yeah, sure your arm feeling the effects of it with our older systems and that's really what it was designed for and accepted throughout North America and really throughout the world, non-union bone fractures. It was help in healing the non-union bone fractures. Recently, they've been applying it to the head on depression patients. This technology has a wide-range of benefits.

Dave: I'll tell you if I put this stuff on my head even at a half power within 10 minutes I have to go to sleep. It's doing something to the brain for sure. That's stimulating it.

On the bone fractures, in your literature you have a photo of someone, an x-ray of someone with, I don't know who it was, it might have been one of you guys,

Gary Volino: It was one of our doctors.

Dave: One of your doctors with a break in his forearm that was fully healed in 9 days.

Gary Ryan: Yes.

Gary Volino: Yes.

Dave: That's ridiculous. There's a bunch of doctors who listen to Bulletproof Radio that keep reaching out. I don't know how many, but there's thousands probably. 9 days to heal a fully broken forearm is unheard of. You can see the x-rays which is one of the things that was attractive to me.

Then we have someone's bone density which is basically the most dense bones on the planet probably. Whose is that?

Gary Volino: Right. That's true. That's Paul Webb, our founder.

Dave: Okay. Paul's the developer of this.

Gary Volino: The developer.

Dave: Paul's off camera but he's ... I've seen his bone density scans and they make the martial artists who harden their bones like they're made of balsa wood. Literally, this is the densest bones I've ever seen. I don't know. I haven't tried picking you up, but he's probably like Adam Mentium at this point.

Can you guys explain why do bones heal so fast? Why are we getting changes in bone density from electromagnetic frequencies like this? What's going on there?

Gary Volino: Gary, I think you can jump in here on this one.

Gary Ryan: What I have observed, I've been using the technology now 10 years.

Dave: In a medical practice.

Gary Ryan: Yes and we'll just call it an alternative chiropractic medical practice.

Dave: You're a DC.

Gary Ryan: DC. Yes. My observation is people will often ask "Will this help for this condition?" Or "Will it help for that condition?" As I mentioned to you earlier, my question then is do they have cells?

Based on a lot of research that was done at Yale, it is apparent that just about any pathology in the body is preceded by a drop in cell charge. Now we have technology that will reach down to the level of a cell that has lost charge and due to the high intensity of the pulse, bring that pulse back to normal or a more normal situation which allows it to replicate and produce a more normal cell. Based on a lot of the bio hacking in principles that you've already discovered with your Bulletproof Diet Plan.

Dave: It's true that cellular charge matters and there is no condition that isn't mitochondrial, right? Inflammation is caused that the mitochondrial level.

Gary Ryan: At the mitochondrial level and the inflammation is the lack of oxygen. The PEMF is a giant oxygenator.

Dave: Can you walk through the biochemistry on how it's making oxygen in the cells?

Gary Ryan: I'm a clinician and I wouldn't even begin to attempt to do that.

Gary Volino: What I think is important and you've said this, I actually got this from you, at its basic functions the cell does 3 things. It feeds. It either flees or fights and then the other F one is reproduce.

Dave: That's pretty much what our cells do all day long.

Gary Volino: That's all they do.

Dave: It's what we do all day long, right?

Gary Volino: But if the cell doesn't have the energy to do those things, it's not going to heal.

Dave: It's going to focus first on eating and running away because it feels like a threat.

Gary Volino: That's right.

Dave: If there's enough energy left, then you'll have some sexual function.

Gary Ryan: Yes.

Dave: Right.

Gary Volino: Your bones, your eyes, there's certain systems that want to heal faster than others. Back in the day when we were walking around the Earth barefoot and naked, a broken leg and you were pretty much dead.

Dave: Tigers can eat you.

Gary Volino: Tigers can eat you and stuff like that, so your bones want to heal. Your eyesight is another something that wants to heal really fast.

By giving energy to the cells, it's going to just speed up. It's a catalyst. That's what's happening here with good electromagnetic field.

Dave: Do you see changes in visual acuity from PEMF?

Gary Volino: Well, I can only speak anecdotally, my dad's 84 years old and I got the system for him for his arthritis. He was on Celebrex.

Dave: Mm-hmm (affirmative)

Gary Volino: He didn't change anything other than using the system. I told him, "Dad, try this out. I think it's going to help you with the inflammation, your arthritis." He couldn't close his hands. He could get his hands like this and after about 6 weeks, he could get his hands like this. He's back golfing. Right now he's 85 and golfing and couldn't be happier. You couldn't take this machine away from him. Yeah, I mean he loves it. So do all of his neighbors.

At the end of the day, what's happening there is I don't know placebo effect? I don't think so, but it's doing something to reduce that inflammation and cause my father to give up his Celebrex. I said, "Dad, why don't you try it on your eye?" Because every 3 months like clockwork he'd get a shot in his eye.

Dave: Because of macular degeneration?

Gary Volino: Macular degeneration, yes. He'd get a shot to replace that fluid. He went to the doctor like clockwork every 3 months for a shot in his eye and I had him try the paddles on his head and I said "Just do it 15 minutes a day. See what happens." Next time he went to the doctor, the doctor takes an x-ray of his eye and looks into his eye and determines what kind of fluid he needs in there. He said, "I don't Mr. Volino, you don't need a shot today." My dad goes, "You're not going to believe this. I don't need a shot today. I've been going for years every 3 months and I don't need a shot today. What is this machine doing?" I said, "Dad, I don't know. Just keep doing it. If it makes you feel good, just keep doing it." That's just the commonsense side of me, not the medical side of me.

Dave: There's macular degeneration is directly mitochondrial and we're seeing and I'm forecasting hundreds of millions of people going blind because of changes in our lighting and when you have these LED lights, they create mitochondrial stress in the eyes and like 23% more of the cells get damaged. I'm doing everything I can to change this and adding energy back into the eyes with pulse electromagnetic frequency like you're talking about is a great strategy to keep mitochondria strong. You have the most mitochondrial density in the eyes, the brain and the heart. If you're a woman, your ovaries are actually stronger than anything else. You have 100,000 mitochondria there versus 15,000 in these other dense areas. What I'm doing on my own, I don't want to get macular degeneration is there's something called Eye Armor, brand new Bulletproof supplement which is a bunch of things that are shown to increase the health of things inside the eyes which is a preventative strategy. Just for general eye health, not to prevent any one condition or anything like that. We know that eyes are more resilient when they have these kind of nutrients.

On top of that reducing exposure to blue light. There's the true dark glasses. Those are the things you wear during the day for indoor and at night, there's a patented set of frequencies that affect sleep that go beyond blue blocking. I do this every day, but I also expose myself pretty much every night I do at least a few minutes on the Pulse Center's equipment that I've got here which is the Big Pulse XL Pro.

Something else interesting, I guess, I didn't bring Merlyn up here, I was going to show off my dog which would be a great incentive to look at the video, but my dog, Merlyn's 12. He's an English Cream Dachshund and he's been blind since he was 2 years old. It's a congenital condition and not much they can do about it. He's over bred. Really, really nice dog, but he's 12. He eats Brain Octane on his food every day. Raw grass-fed meat. Liver powder. He's as Bulletproof as it gets. You can Google Bulletproof Dachshund. There's a whole article about what I feed him. He's a very healthy 12-year-old Dachshund given that he's got genetic problems.

I started putting him on the Pulse Center's mat. I lay on it for 15 minutes. He lays on my chest and when you turn it on, he lifts his head up and looks around.

You can tell he's feeling it in his body, kind of a little bit curious about it and then I'll get off and I'll do some work and I leave him on there for 90 minutes at a relatively small field strength. We're doing the Schumann Resonance, 7.8 Hz and he's running at maybe 10% of the total field strength because I think he'd probably levitate if I turned the thing all the way up. He's just a little dog. He just curls up on there, but he's like a puppy. The change, just even over from 2 days, I come in and dogs, you know the way when they want to play, they put their butt up in the air and they put their paws down on the ground. He's stomping around like a puppy and he doesn't do the Pulse Center Pulse XL Pro I've got, but if he doesn't do that after 3 days, he's still wags his tail and walks around, but he just walks instead of bounces around. Huge changes! This is a dog that can't really exercise because he runs into things because he's blind. Huge changes. I wanted to wave him around.

Gary Volino: It's interesting that you say that. We have a whole side of our business that's in equine business.

Dave: Of course.

Gary Volino: A horse is just a really big human.

Dave: Yeah.

Gary Volino: All the organ systems and everything and you would think that applying electromagnetic fields that they can feel that the horse would run away. Completely opposite. The horse sees you coming with the system

Dave: Mm-hmm (affirmative)

Gary Volino: And we have a big yellow box EQX is the system and it's much lower. The strength is nowhere near the Pro because they don't need the strength. Their muscles and the way their body ...

Gary Ryan: They're much more sensitive.

Gary Volino: Much more sensitive. When you come walking into the stable with that system, the horses get excited and all they want is to be up against that system. They know those rings that we put on them make them feel so much better.

We have some horseracing individuals that use the system on their horses. Promote our system and I talk to these men and women, they're just amazed. I didn't realize this but veterinarians have been using them for years. Again, my naiveté in this whole side of alternative health or however you want to look at it. This has just been a phenomenal thing for veterinarians and there's no placebo effect in horses and dogs and cats. They get it. They're just naturally drawn to it.

Dave:

Some of the interesting things about horses is they are electromagnetically sensitive and I've been studying heart rate variability which is kind of the flip side of what we're dealing with here. Your heart is the strongest magnetic field generator in the body. It makes a donut shaped field that's tipped 8 degrees to the left and we can measure it several feet outside the body, but we know magnetic fields actually go out to infinity. They just drop in signal strength over distance.

When you walk into the stall of a horse that's trained to be ridden, it's heart rate variability, the spacing between it's heartbeats will change to match yours. So if you walk in there tweaking, you're going to have a nervous horse and you walk in there calm, it'll actually sync up with you. That's one of the reasons that these things probably work.

In my 20 years or so of really focusing on this bio hacking stuff, there's 2 groups that are most interesting for cutting edge stuff. One of them is race horses. The people who have \$10 million horse will do anything on the planet that works and they don't care if they know why, but they are going to find what works because the economics are so important there.

The other one is Special Forces Navy Seals and guys like that. Same thing. They're probably more like \$50 million people and if they can do something to make them stronger, faster, more resilient or to heal better, it's worth it and they'll do things that are off the menu.

When I had whiplash going back maybe 17-18 years, the second time I had whiplash. The first time it took me a year to heal. I did chiropractic every week and it was miserable. I had chronic inflammation. I was living in a house that had toxic mold which makes it very hard to heal from anything and I didn't know this. But the second time, I actually was hit much harder and I was "Oh man, my hands are cold. I've got a headache. I'm completely zombified. I'm messed up." I met a naturopath friend and he had a medical laser only approved for use on horses because there were no medical lasers approved for use on people back then. I took this thing, put it on my back. Within 3 minutes my hands were warm. I felt like a loosening of the muscles. Straight out of race horse repairville.

This week I may or may not have injected a research chemical used on horses for rapid healing. In fact I healed a sprained ankle in 36 hours with race horse technologies because I didn't have PEMF. I was down at the 40 years End Facility. I sprained my ankle and I was golf ball sized swelling. I was completely fine in 36 hours with that kind of race horse tech. It was still a little sore though. I came back a week later and I put the 2 rings from the Pulse XL Pro around the foot and fixed it the rest of the way. I was completely fine. There's no limp, but I could still feel like some extension of the ankle. It wasn't quite right so I literally laid here for 1/2 hour with a Pulse XL Pro and it resolved.

This kind of rapid healing stuff, I love it. I didn't even realize that you were doing stuff with the horses, but that's where if you have really bad stuff going on, you

should see what they do for horses and go there as a last resort. And the FDA hates it when people say that, so sorry guys.

Gary Volino:

As long as you say it.

Gary Ryan:

There is and I am told that in California that the use of PEMF on a race horse on the day of the race is forbidden.

Dave:

Oh, really? How would they know?

Gary Ryan:

I don't know how they would know one way or another, but I am told that it's because it is so effective.

Dave:

There's something wrong with the world. The most effective things that make people live longer or animals in this case, feel better and perform better are banned. There's a core belief that our condition should be suffering and striving. Whereas the work I do with the Bulletproof Diet, with Head Strong, it's about reducing struggle by increasing energy. I would consider it unethical to allow race horses to run without PEMF because if they perform better, they're less likely to be injured and we'll probably have a better race.

Now that we know what works, why are you allowed to not use it? The same goes, by the way, for you professional athletes out there. If you're over 35, those sport bodies should require that you get your testosterone and growth hormone and all your other levels done and that you supplement so you don't hurt yourself. This idea of destroying yourself with exercise as you age, oh my God! How masochistic can you get? Can we bring back self-flagellation and horsehair shirts and crap like that? That's just not okay. Alright. I'm sorry. I may be completely off topic here, but ...

Gary Ryan:

Not really.

Dave:

Sorry.

Gary Ryan:

I concur with your assessment of it. Going back even to your visual acuity which I have a number of people I'm going to say coming in in their late 50's to mid-80's and one of the side effects they may be coming in for one reason or another, countless number of times and I'm not surprised to hear it anymore, although I was at first, was "I went to my ophthalmologist and they had to change the prescription on my glasses." I go, "Oh, well!" They go, "No, they're improving." Not once, but twice and possibly three times. In effect, the visual acuity has gone up. Recently as of this week, a man that made dental, I don't want to say implants, but any way dental accessories, worked in a lab under the wrong kind of lighting for a long time, he's in his early 60's, bleeding macular degeneration.

Dave:

Oh, the wet stuff is bad.

Gary Ryan: And I will say that after 2 weeks the bleeding has completely stopped and the wavy lines are almost completely corrected.

Dave: Wow!

Gary Ryan: Not that that was our focus. We're only providing energy to raise the efficiency of the cell.

Dave: Since everything in the body is mitochondrial except red blood cells. They don't mitochondria, but everything is mitochondrial. If you come in and you take a treatment whether it's a nutritional supplement, a change in diet, going into ketosis, you shouldn't expect one thing to change.

The history of Western medicine is "I'm a kidney doctor. I'm just going to look at the kidney" or "I'm a knee doctor and screw the ankles and the hips. I'm all about the knee!" This lack of systems thinking, when you peel back the layers of the system all the way down, you realize that mitochondria are running the show. These little things, we didn't harness them to make them into our batteries. They moved into us to make us their Petri dish. They decide what cells live and what cells die. They decide what inflammation will happen. They decide how much energy you'll have where. They actually make pregnenolone which is the precursor of hormone and that's why hacking them is so important.

In the universe of technologies for hacking your mitochondrial energy, you should expect everything in your body to get better when you do that. Erectile function, cardiac function, cognitive function, dental health, skin health, it all gets better when you have more energy and the body will in its genius selectively apply that energy on an order of necessity. The areas that are the most damaged, that are the most critical to function, will get the energy first and when you have enough energy for everything, the body is "Hot damn! What am I going to do next?"

Gary Ryan: I'm going to walk around and feel fantastic.

People go, "Do you feel good?" I go, "No. I feel great." Just what you're saying is one the assets of Pulse Centers and what they've done with their equipment is I think what we're going to find is we're going to be measuring not only the efficiency of the mitochondria, but we're doing to be looking at where the fields are down in relation to the mitochondria.

As opposed to treating one area that is deficient, we're going to find other areas and we have ways of doing this, where the actual field is deficient and by bringing the whole field up, the mitochondria follow along with the right nutritional background.

Dave: This reminds me ... this must be 2006-ish, I had maybe 2007, wow! I'm old. I had coffee at the Red Rock Coffee Shop in Mountain View which is a place I used to

go work when I lived down there. I'd just sit there and do email and I had coffee with the guy who held the first patent for 80211B, the first Wi-Fi out there. If you've ever spent some time in Silicon Valley with engineers, these are my people. Beards and eyes pointing in different directions and super geeky. I actually spent most of my time in that world more so than in the human performance, but this guy was so brilliant and he said, "Dave, we have millions of dollars of test equipment for looking at subtle changes in magnetic fields. That's how we troubleshoot these Wi-Fi signals." He said, "So what I did is I turned the equipment around on my body and look at the data." He turns his laptop around and he has all these magnetic fields coming off the body going "Hey, look at this. I'm pretty sure that we have diagnostic level information here, but what do I know. I'm an engineer. I'm not a medical professional, but there's so much we can do with all this."

I haven't talked to him in years and years and years, but the idea that he was using stuff from Wi-Fi to look at the human body and to look at different field strengths and different rotations and things like that at different parts of the body. The data's all there, but this completely outside of medical school. This is not in the universe there. Yet, what you're talking about here, if you get that data, I'm pretty sure that we'll be able to say "Put the paddles from the Pulse XL Pro here and put them on this field strength and you'll be able to modulate something."

Now I'll sound like I'm going to fly a spaceship to Mars or something, but eventually you don't need to have the paddles close to the body. You should be able to have it across the room because that's what we do in fighter jets. You have radar countermeasures. Why couldn't you have a radar countermeasure towards a human being? Are you guys working on that? Can you tell me about it.

Uh oh, they gave each other a suspicious look. They're working on it. Okay. You guys hear that?

Gary Ryan: Yes.

Gary Volino: Gary's been talking about it and we've been bantering it around, but we're focused right now on the body.

Dave: I can tell you guys I've been working on it too and right now I use a pulse electromagnetic frequencies to upload malware, so both of you when you think of your ATM codes, I receive them. Just so that's all clear.

Sorry, that was the computer hacker side of me mixed in with the bio hacker side.

One of the concerns I have here and one of the reasons that I created the bio hacking term and didn't trademark it or anything back in the early days is that

you look at what computer hackers have done for the computer security industry. There are people who do hacking. In fact, the CIA's set of hacking tools just got released a couple weeks ago. Oh, look! They were doing this crap to us all the time, yet those of the hackers in the know were "Yeah, we knew that because we've been using these for things like that." You want to have public knowledge and then there's misuse of these things by big companies and by governments.

Well, now that what we just talked about here, if we can just establish that pulse electromagnetic frequency matters for human performance and that there's at least a potential to do this, Pulse Center and other people at the very cutting edge of PEMF have to go out and figure out what this stuff is, because otherwise there is no reason why you can't build devices that do things to people without their knowledge or permission. In fact, do we call those wife routers? I believe it's possible to make a Wi-Fi router that improves human performance instead of takes it away.

Can you guys do that? Can I buy one?

Gary Volino: Not today.

Dave: I knew the answer to that.

Gary Volino: Yeah.

Dave: But this is why PMFs matter and this is why I love what you guys are doing.

Do you do stuff in your offices or in your home? Obviously, you are using your technology to make yourself stronger. Do you block EMFs? Like the ones that aren't serving you 2.4 GHz. 5 G, stuff like that. Do you live in a Faraday cage? Let's talk about that.

Gary Volino: Absolutely.

Dave: Because people can use that at home who are listening right now. They may or may not be able to buy a clinical grade device. They could certainly go to a clinician and use it, but when they get home what should they do?

Gary Volino: The simplest things, most people walk around with cellphones. Keep that away from your vital organs and when you're sleeping at night, don't have it on next to your bed stand. Those type of things. They also make EMF blockers that go on, that you can stick on your cellphone. The headphones that I use are Air phones. It's not a wire going into your head. It's that air tube that's going into your head. All is very inexpensive. Of course, they make things that go into the plugs. Your AC outlets.

Dave: Yeah. I have some of those on website. The green way filters are on the Bulletproof website.

Is there a brand you like? I don't know if you even know that one, but ...

Gary Volino: No. I don't. It's been awhile since I bought those so I can't even remember.

Dave: You buy them and plug them in once and forget it.

Gary Volino: That's what you do. You buy them and plug them and forget about them.

Gary Ryan: Same with mine. There's devices even that I have in my truck.

Dave: Okay. Anything you'll recommend?

Gary Ryan: I have again, it's been in there now for 4 years. I couldn't even tell you what it is.

Dave: I want to tell people the name of my Schumann frequency think but I bought it 20 years ago. I don't know. It looks like an alarm clock.

Gary Ryan: It's easy to go online and there's a number of devices.

Gary Volino: There's a lot of them out there.

Dave: I would say at a minimum blocking chaotic emanations from your electrical system. That's what the green way filters do.

In my kids' bedroom and my bedroom, I have a remote control switch that's plugged into the breaker box so it looks like a garage door kind of thing, I press a button and it physically cuts off all of the power that goes into the bedroom back at the circuit box so that there's no magnetic fields at all from the power system. You actually feel a difference when you sleep. I think those must cost like \$600 or something. Not that expensive and it requires an electrician or someone who knows that they're doing at that electrical box.

Let's see you put some kind of countermeasures on your phone. Pong makes case. The idea is the primary thinking in the Bulletproof Diet and in Head Strong is what if you stopped doing the things that make you weak. Do that first and then do the things that make you strong. Primarily I want you guys here on Bulletproof Radio to talk about incredible changes in cellular health and strength that come from the kind of gear that your making at Pulse Centers and I'm definitely seeing the effects. I see it in my dog. I see it in my wife. I'm seeing it in myself. What about kids? I didn't ask you guys about that. Should I be putting my kids on here or are they going to grow cactus bones or something? I have no idea.

Gary Volino: No, the contraindications and there's tons of studies out there. If you go to pubmed.gov, search PEMF, you'll see a lot of studies. There's no contraindications have ever come up except for pacemakers because it's an electromagnetic field and that's an electromagnetic field battery implanted in you.

Dave: Right.

Gary Volino: Things along those lines.

But artificial knees and metal inserts and stuff like, the magnetic field just goes around it. It's not going to go through it.

Dave: I have a screw in my knee and it hasn't popped out yet.

Gary Volino: No. It won't bother it.

Dave: I don't feel anything in it.

Gary Ryan: I have many children or parents now that are aware of what's going on. Once people have experienced the quality of this pulse, it's a little bit like it becomes a need as opposed to a want. I've experienced dentistry. I like clean teeth. I like how I feel after flossing. I like how I feel after a dental cleaning. Once your cells are operating on that level of "Boy, I feel really good" that's an addiction in itself. People will return going "It's time for a charge. How long do you hold the charge?" How long you hold the charge depends on how healthy you are. The way you eat. Your lifestyle.

Dave: Mm-hmm (affirmative)

Gary Ryan: And the way that you're living your life. The supplements that you're taking. There's so many variables, but that idea that we can live at a very highly charged level of mitochondria is great. The parents get it and the children are brought along.

On contraindications, kids have stress. There's toxins in their environment. They're subjected to bad EMF. They live on their cellphones. They're kids.

Dave: I spoke at the Autism One Conference about mitochondria a few years ago and I know parents of autistic kids who are definitely using PMFs because anytime you make mitochondria work better, everything gets better and as someone who had Asperger as a younger person, I had OCD and ODD and just all sorts of weird behavioral stuff, when the mitochondria work, it goes down. When the mitochondria don't work, it doesn't.

The thought behind, both in that community but just in general for performance, is you get more energy into the cells. That's kind of the

Bulletproof Diet, Bulletproof Coffee, getting the ketones from brain octane oil which works differently than MCT or coconut oil which are far weaker in university studies, having that happen or doing a full on ketogenic diet that's cyclical, more electrons come in. But the efficiency of the use of those electrons is another variable that I don't really address too much in the Bulletproof Diet and that's why Head Strong comes out.

Because when you hack the mitochondria to make better use of whether it's ketones or glucose one of the primary things that your mitochondria listen to is the electromagnetic spectrum. They look at light. They look at magnetism. They look at temperature. Those are all part of the same vibrational spectrum. They even look at physical vibration. Sound, music and then they look at exhaust gases and they look at food supply and they look at stress levels and all these other things. But what you're doing with PEMF, you're actively changing the efficiency of the use of the energy. Put more energy in the top and then make better use of it and what comes out at the bottom, is humans who behave differently and perform differently and I believe likely live longer and are able to recover at rates that defy conventional wisdom all together. Which is why you guys are on.

Gary Ryan:

Right.

Dave:

Does it get more superhuman than that?

Gary Ryan:

Not that I can see.

Dave:

I haven't found a way yet, but I'm still working on it. Give me time.

Gary Volino:

We know exercise is good for you. That's what we call PEMF exercise because it is exercise. It's moving your cells. It's causing that energy. The simplest form is just look at the definition of battery. It's a collection of cells that hold a charge. We're a collection of 75-100 trillion cells and we hold a charge.

Dave:

Yeah, we hold charge with a quadrillion mitochondria.

Gary Volino:

Right. Right. We always think of how to take care of ourselves chemically meaning good water, vitamins, minerals. Gary here calls them M&M's, micronutrients and macronutrients and we know how to make that happen. But electrically we never think about what's making that charge happen in your body. Me moving my arm here today is all electrical impulses.

Dave:

Mm-hmm (affirmative)

Gary Volino:

There's this electrical side that hasn't been addressed adequately enough until really pulse electromagnetic fields has come on the scene.

Dave: I'm definitely grateful for having one of your Pulse Center devices up here and I have kind of the full thing because I tend to go all in, so I have a chair. I'll show you guys all this stuff when you watch the video.

I just grabbed Merlyn, the dachshund I was talking about before, and he's a happy little guy. Just hanging out. "Hey, Merlyn." He seems a little nervous on camera. He's camera shy, but normally he'll just let me hold him like a little baby and he'll just kind of look happy. But he's way more energetic than he was before. "Isn't that right, Merlyn? Yeah."

As we were saying, there's coming changes in human performance that are coming about because of PEMF and I've got a chair and a foot rest that are super, just really powerful. I've got a mat that I lay on and some paddles that are so strong you can put them pretty much anywhere on the body that concentrates the field to the point where your muscles will jump. It's a remarkable set of technology. I'd encourage you to go out and try this at a local functional medicine practitioner and I fully expect that it's possible for things like massage places or CrossFit places, places like that to use this tech or is it only medical?

Gary Volino: They certainly can. Again,

Dave: It's exercise.

Gary Volino: It's exercise. This is exercise. Exercise has been proven good for you and it's a simple technology to operate as you found out.

Dave: Oh, yeah. You can turn the thing on and dial a knob until it makes you twitch.

Gary Volino: Dial it in. Yeah.

Dave: Alright, guys. Well thank you for being on Bulletproof Radio. Your location finder for this stuff is at

Gary Volino: Pulsecenters.com.

Dave: Okay. Alright and it's hard to put words to how it feels when you turn your mitochondria on all the way. This is not a subtle technology. It's something where you lay on it and you know exactly what's going on so if you're dealing with any chronic condition, every chronic condition has mitochondria at its core. There may be toxins in your environment like if you're living in a moldy house. It will poison your mitochondria. They won't work as well so you can use things that increase their performance. You still need to get rid of the root cause, but you'll feel a lot better when you're able to go out and just turn the energy in your system up.

It certainly made a difference for me and I'm already doing very, very well, but there are other levels of performance and that's why I had these guys on, Gary No. 1 and Gary No. 2. That's Gary Volino over here and Gary Ryan over here and why I wanted you guys to hear about this.

There are skin-deep PMF devices you can get that don't do the same thing as this but that have their own set of value as well.

Gary Volino: And you've tried those, right?

Dave: Oh, yeah.

Gary Volino: You know the difference between what that does and what this does.

Dave: Yeah.

Gary Volino: That's good.

Dave: Very big difference. There's other technologies like lasers and infrared lights and all sorts of things. I write about pretty much everything I know of that will effect mitochondrial function in Head Strong. This is one of the big guns and something that's worthy of your consideration.

So, thanks guys.

Gary Volino: Thanks for having us.

Gary Ryan: Thank you.

Gary Volino: I really appreciate being here.

Dave: If someone came to you, I guess we'll ask both of you, get a double answer here, so I'll ask Gary Volino first, who's an entrepreneur who just moved into the PMF space, if someone came to you tomorrow and said, "I want to perform better at every single thing that I do. What are the 3 most important pieces of advice you have for me?" What would you offer them?

Gary Volino: I think it starts with a good foundation of food. You have to eat right. There is something to organic food and natural fruits and berries and those types of things. Good water. That's all very important, the nutrition side of it. The exercise is important, too. If you want to stay aerobically fit and trim, I think it's important to get the exercise in. Then you really have to look at the electrical side of it. I hate to plug my own product here, but I have to. There's such a difference when you're on the good pulsing electromagnetic field and when you're not.

Dave: Awesome. And Gary No. 2.

Gary Ryan: I'd be beating on the same door. I would probably sound a little bit more like a doctor, but I'd say, "How healthy are your cells and are they happy?" If your cells are happy, you have highly functioning mitochondria. The mitochondria require oxygen, therefore you need to move. They require water, therefore you have to be hydrated and they need M&Ms. At which point someone kind of looks and laughs, macronutrients and micronutrients and to stay away from the anti-nutrients so that you've got that cell up and functioning.

The next thing I do and I am not part of the company in that sense, but the idea of being able to charge a cell is going to be as commonplace as brushing our teeth and right now this technology does it. When you add that component to it, you are going to elevate the function of the cell inescapably.

Dave: Awesome. Well, thanks for some awesome answers. By the way, I fully agree, being able to charge the human body, there's different ways of doing it and this is one of the fundamental ways. It's not just food that charges you. There's other things. PMF is one of them.

Gary Volino: That's right.

Dave: Awesome. Thanks, guys.

Gary Volino: Thank you.

Gary Ryan: Thank you.