Introduction to EMF Toxicity

I'm very excited to share with you information on the toxicity of Emfs. This is, one of those subjects that the more you dig into the medical literature, the more you can't believe the massive amount of literature and data that's showing that emfs at supposedly safe levels are very toxic.

And clearly showing that. So, I'm going to, hopefully give you a little, taste of, of the literature. And there are just massive amounts. I, I'm just scraping the surface here for you guys.

You know, if emfs were a drug, they would never get approved. They would be immediately recalled. And, you know, I speak on a wide range of topics, and I often hear there's so much, you know, basically medical literature.

Why haven't I heard of this before? And the answer is usually money. And and or politics are usually both. So but I'll, I'll present, a little bit and give you a taste of some of the data and looking through it.

I'm just blown away at the basically massive amounts of literature that are showing how emfs are affecting our lives. So, we'll get started here. So counteracting EMF toxicity with peptides, really?

The EMF, the silent killer. Disclosures. Honor, the medical group, chief medical officer of the nonprofit National Academy of Hypothyroidism. And chief medical officer of integrative peptides.

And and, for some disclosure, the, legal team is making me say this. So, I am chief medical officer of integrative Peptides. The opinions expressed are mine and not ness and do not necessarily reflect those of integrative peptides.

And none of the information and claims contain within this presentation pertain to a specific product and are not endorsed by integrative peptides and have not been reviewed by the FDA.

And no statements in this presentation have been evaluated by the FDA. Products from integrated peptides are not intended to diagnose, treat, cure, or prevent any disease.

And you had the legalese on the right there. So, write goals and objectives that we'll talk about what what are in Mecfs and how do they work. We'll talk about manmade versus natural, which is a big difference.

Types of exposure or the controversies, the effects of EMF, sun on health, of course, and how it relates to really multi-system dysfunction that we see with other chronic illnesses and other toxic exposures, cellular effects, neurologic immunologic behavior, psychological effects, cardiovascular, thyroid, and hormonal effects.

We'll go through basically a little intro to peptides and the basic major class of peptides, including the core of all this will come down. And I hope I can convey is that immune modulating and with all the common denominator of all these illnesses is immune dysfunction and mitochondrial dysfunction.

But with the peptides you can get much more specific. And with brain, mitochondrial, boosting, you know, kind of anti-aging, aging, anti-inflammatory.

We'll talk about the importance of the gut brain axis. And, you know, the more we learn about the gut brain axis is, the more we learn it's important.

And emfs really affect that a lot. And which then goes along to everything's a vicious cycle. And really the synergy between multiple peptide therapies and other therapies as well.

So what are EMF. So there's a typical cell tower hidden in a fake palm tree. But so going back to physics and don't get too hung up with this, but there's basically emfs electro magnetic fields are, there's the electrical field or the magnetic field and they're perpendicular to each other.

So there's basically a wave. And you can see here electrical field goes one way and then 90 degrees there's the magnetic field. And where do these come from.

So the extremely low electromagnetic fields are they're basically familiar. That's like cell towers. And which or the high tension wires where really you'll find that the magnetic part of that is the biggest problem rather than the electric field.

And those were more associated with leukemias and cancer. Then you start getting into where this is where we're really talking about is the, emfs here in the, range here where you get cell phones and the, the routers and the Wi-Fi guys, those are the are by far the biggest problems.

And then you get also electromagnetic fields from wiring in your house, and things like that, which they all cause problems.

EMF Physics and Natural vs Artificial Exposure

But really, I think with, Wi-Fi and the cell phones, and I'll show you studies where just the, cell phone can cause basically brain damage and, you know, showing with, with rats, learning disabilities and actual, brain damage and, actually, so and we're being bombarded with this and, and how they actually all these, EMF is coming from multiple sources in nature.

They cancel each other out, but with artificial, they actually combined to be stronger. So that's that's a major problem. And this is the basis, cell tower here.

And this is the electrical field, but there's also a magnetic field associated with that. And just another depiction here. The magnetic field, when you have, current going through a wire, there's electrical field and a magnetic field around it.

Again, perpendicular. But, and but the key is polarization. So in nature, basically the emfs are created from, natural sources where basically electrons are changing from, basically, different states, and they're putting off in random directions and they end up canceling each other out.

So really, all you get is when you get exposed values, let's say it's the sun or the earth is you can get thermal, basically error or excitation of, molecules, but they don't change.

They don't cause an electric charge in the body, like the basic artificial ones is the man made here. You look at the the waves here. And when they're basically in sync, they combine to cause a bigger wave.

And they can also cancel each other out. So all types of manmade amounts are polarized, so they only have one direction or again naturally they're non polarization.

All directions. And so when you have multiple sources they cancel each other out. But when basically they're typically sent out in the vertical like or with antennas that you get these basically spots that are additive and you'll get low spots.

You can get these and also coming from multiple sources, you can have spots randomly and also moving where are huge levels of electromagnetic radiation.

Again from the sun light bulbs are non polarized. So infinite number of of planes. So they cancel each other out. And where as you can see here, you know basically going from all around it equals zero.

But when you have them all in one direction you're going to get additive parts and you're going to get parts that cancel each other out. So in nature there's no force on a charged polar molecule other than if there's just general increase in molecular, Brownian motion.

Basically, it heats up the tissue. But very different with manmade emfs. Again, they're polarized. And the problem is when they look at safety, they're looking at just what basically it can happen with the amount of thermal increase, like how much heat.

But that's not the problem. It's that when it's polarized is it also it's AC current which goes back and forth. It causes all these cells in your body to line up charged molecules to line up and go back and forth and and oscillate with the current.

And we have not basically billions of years of not been exposed to this. So basically you get, huge amounts of EMF energies at points that are unpredictable.

They vary in location and strength depending upon the location and source. The frequency. You get hotspots where all of a sudden they all come together and where you get huge, huge levels and, just some more here about where the how the waves will basically combine.

But if they're non polarized, they cancel each other out. And what we're finding is that the biggest problem is the cell membrane sensors for the gated ion channels, especially the calcium ion channel.

Will open. And this is the same thing that is happening with the cell danger response that allows calcium channels to be opened. And cause mitochondrial dysfunction, which then becomes a huge, vicious cycle, vicious cycle with immune dysfunction.

Hyperlink pituitary dysfunction. And it just goes around and around, and where natural emfs won't do that. So, you know, throughout an evolution or time on Earth, we've been exposed to non polarized.

Emfs. But we've never been exposed to, the polarized emfs. And so basically just a millionth of a non polarized, the EMF, a polarized can have a biologic effect.

And when you look at the studies, you'll find that if you look at industry studies, about 70% show that MPs are totally safe. Don't worry about it. About 30% show they're harmful.

But if you look at non industry funded, studies, 70% show their harmful and 30% show no effect. So you'll see that a lot. Unfortunately medicine and unfortunately and this is also within the range of so-called accepted safe ranges, significant toxicity.

So again, if this were a drug, it would never even be considered. And also when when you look at how MPs are put out artificially, they're put in pulses and as you can see here and the pulses are what get you.

It's not the average because these high levels of EMF will now cause alignment of these all the polar molecules in your body where they're again, we'll talk more about the, the gated voltage channels and other things.

And they have a huge effect on the body where but the average is very low because they're, it's, it's basically their pulse. So a lot of times you won't have anything, but all of a sudden a big hit of EMF, even just one watt emitted from a mobile phone can cause DNA damage.

The, the safety data standards, estimated potential thermal damage, again using non, polarized and but that's not the problem. It's the problem is is this how it causes your, body, these molecules to line up and and, oscillates.

So back to the emails call where the peak pulse is not the average, which is this is how Wi-Fi is, work your cell towers, your cell phone. It's always sending out pulses.

So they're much more, potent, able to elicit a biologic response that tiny doses that would never, you know, thermally heat up your body. So they assume that they're safe, but it's a totally wrong assumption.

So thousands of studies have shown and support the fact that very low intensity, polarized, pulsed, non thermally acting emfs can result in abnormal activation of the voltage gated calcium channels and that are 7 million times lower than what is considered safe.

So they again they just look at well is going to heat up the body. Let's look at electric cars. For a second here. Now the lower body, even of a car is a conductor of medical electricity.

It's like a Faraday cage. And all of you know what that is. But if you remember the pictures of Tesla in a cage were all electric. Lightning bolts are all around.

But he's he's totally fine, so that insulates the person inside from the electromagnetic field. But it's the electromagnetic field coming from inside the Faraday cage.

It is amplified tremendously. So anything that's going on inside the car, whether it's if you have a cell phone, the Bluetooth, all the electronics in the car, they're hugely magnified because they don't escape the car.

I mean, it's not a perfect Faraday cage, but it it is pretty good and modern cars have so many different, computer parts that are sending out, you know, air maps and connecting to one another and Bluetooth, that it's a problem.

But then when you look at electric cars now we go to even bigger, level here. They pose a significantly larger as they have, you know, huge electrical currents and batteries.

The tested magnetic fields exceed 30 times the levels that are seen in very close proximity to the high tension wire. So there are high tension wires.

You get about 4.2 to 5, micro Tesla. Magnetic field units. But you can see here on the left that in like the BMW, if you sit in the back seat, it gets about two 100 in the Nissan.

About 100 in the front seat with the Tesla, about 50 in the back seat. The Volkswagen about, you know, 86 in the front seat. So huge. And the Australian, Radiation Protection Nuclear Safety Agency states that areas having, oscillating magnetic fields between 2 and 100, micro Tesla must have an appropriate warning sign.

Okay. And these are right there in the hundreds. And fields above 100 must be controlled by the permit. So it's like it's like toxic. You got to warn people.

I've never seen a warning label on a electric car. And just looking at a pulled announced a nine. Studies reported a two fold increase risk of childhood leukemia, and children exposed 2.4 micro Tesla or higher.

And again we're talking about a hundred here. Where they're, you know, average and you're getting average is not there's not the big problem, but you know like five, six, seven but, you know, getting up to 150 to 100.

Health Effects of EMFs Across Body Systems

So at points for a higher increase, leukemia. A meta analysis of 15 studies showed a 1.7 increase in childhood leukemia among children with exposures of 0.3 units.

Micro Tesla higher again, the electric cars are way above that hundred, you know, hundreds of times higher. And, basically another, studies show a 1.4 increase that again, 0.3 or higher of leukemia.

So people, you know, with the electric cars, hey, want to, you know, decrease my carbon footprint. And, that's all. Oh, great. But, you're you're getting into a basically huge electromagnetic field.

And, you know, what's the biggest way you can reduce your carbon footprint is not have children. And you may not be able to have children driving an electric car.

And I didn't I took out the studies on, on fertility, but just because we had, too many things to go through. But, it's it's a major problem. And then, you know, put children in electric car that are much more susceptible to electromagnetic fields.

I, you know, I, I won't get an electric car, but, I'll probably get, you know, Tesla send a hit man off after me, but, well, what are the effects of EMF?

So let's talk about that. So, we see in the studies, anxiety, depression, ADHD, OCD, stress, more emotional, you know, lack of sleep, I think is is the biggest thing you don't if you have, like, Wi-Fi and electromagnetic fields when you're sleeping, you don't go into deep sleep.

And hugely associated with Alzheimer's, neurodegenerative diseases, ALS, huge association, cognitive dysfunction, learning and memory. And we'll look at a lot of studies with that.

Hypothalamic pituitary, tons of hormonal deficiencies. Pineal thymus gland dysfunction. So and we'll talk about which kind of a key to aging. So it's really an accelerated aging.

These emfs are changing, making us age so much faster. And we're getting all these diseases of aging when we're younger. And, you know, and I look back, you know, 20 years ago, I don't remember everyone being sick, but it seems like everyone's sick and everyone has these kind of diseases of aging.

And they're young, again, sleep disorders, insomnia, brain tumors, tinnitus, the, but the basically a, brain blood barrier and even just almost instantaneously your blood brain barrier will open up in electromagnetic field.

It's it's crazy and goes along with the gut. So all this, you have leaky gut, which means leaky brain. Emfs are certainly contributing, and a lot of things contribute.

So it's another thing that is causing huge problems. It's also, you know, shown to, basically stimulate the growth of toxic molds and make them, stimulate them to secrete mycotoxins at a million fold times higher.

And in the presence of electromagnetic fields. So it's it's getting us multiple ways. And, you know, we're finding all these, you know, mold problems, which, you know, no one's talking about mold problems.

20 years ago, MPs are making mold just grow everywhere and much more toxic, much more toxic. And it's making the bacteria also become, resistant to antibiotics.

So it's it's bad stuff. Inflammation has lots of inflammation. IL six, interleukin six. And we'll talk about that. And a quick thing. And again, we've kind of turned into an immune modulating clinic because all these things have a very underlying common pathophysiology of this immune dysfunction.

The T th one t rag to to treat 17 chip. So t one basically think about get stuff inside the cell to get stuff outside the cell. Use their balanced but with chronic illness with emfs.

Basically toxins aging, inflammation. Your T one goes down, you can fight intercellular infections but the T two goes up. You know, this inflammation, autoimmunity and all these problems.

And then also G17 goes along with that though don't want to make it too complicated there. Mast cell activation. Huge problem that we didn't see 20 years ago, against too much pathogens I was talking about other toxins are synergistic with it.

So, you know, heavy metals that you be fine with heavy metals until you get into an inner EMF field, autoimmunity, it's causing, diabetes and insulin resistance, mitochondrial dysfunction.

And, it's very interesting when you look at those calcium, those voltage gated, calcium channels and all their work by amazing work by, Navajo and looking at the cell danger response where the mitochondria, where we think of them as just creating energy, but they direct so many things in the cell.

And what happens is they get leaky. And so it just they can't produce energy. Instead they produce inflammation. And this is what happens when you basically get an in, on an EMF field.

You mitochondria get leaky and calcium floods in, and you don't make ATP, but you make inflammatory reactive oxygen species, and you just become totally inflamed, cardiovascular dysfunction.

And I can't tell you how many people, you know, with palpitations and, sensitive is that if they get out of the Wi-Fi and, but basically, like, shut out their Wi-Fi is at night and, you know, and to protect so that also in their palpitations and heart problems go away.

And again with that because of that calcium channel, that is causing, basically the heart to flutter, and palpitations, hypertension from inflammation, fatigue, weakness, pain, increased cancer.

We'll talk about DNA damage. And you know, it's basically called non, ionizing radiation. It's not powerful enough to to basic actually directly damage your DNA, but it certainly indirectly damage your damages your DNA.

And also epigenetics, meaning that it will turn on certain genes and turn off certain genes, and it turns on all these inflammatory genes and genes that are not healthy.

So you get leaky, got leaky brain and fertility EMF sensitivity syndrome, which, more and more people, it's occurring a kind of multiple chemical sensitivity where, where they're treated like they're just making it up.

But I see some studies where they're not making it up that they, are blinded to the fact that they're in the field or not. And they have total, genes or physiology.

So really, over the last 20 years, a robust, robust body of independent science has emerged showing significant negative biologic, impacts or exposure from Emfs.

And there's clear evidence that you showing a developmental delay, neurological and cognitive dysfunction or degenerative diseases, heart abnormalities, thyroid and hormone deficiencies, reproductive effects.

And also with a mother just holding a cell phone, you know, basically on a stomach, not only affects the baby, but it's affects because it's it's basically affecting the gonads of the baby.

So it's the babies baby as well. So it's multi-generational, increased lots of inflammation. Again immune dysfunction. The mitochondrial epigenetic is is huge, abnormal activation of the voltage gated ion, which again, we'll talk about leaky gut.

Just some serious health problems. And, this was in the 70s. Doctor Robert, Becker twice nominated, Nobel Prize, said, I have no doubt in my mind that at the present time, the greatest, polluting element of the Earth's environment is the proliferation of electromagnetic fields.

So he understood it. Then, and it's gotten much, much worse. So here's looking at a study, looking at people's symptoms, in relation to their distance from a cell tower.

And you can see how there's a direct, you know, basically decline, you know, increase the closer they get, especially with fatigue, sleep disturbances, headaches, just uncomfy, like when they jump out of your skin.

And what you hear that a lot for concentration depression memory loss. And you can see this direct correlation with the distance from a cell tower. And like does this you look at these symptoms, they sound very much like chronic fatigue syndrome, fibromyalgia.

Sears Lyme diseases of aging. And they all share the same logical phenotype that shift in the immunity that wanted to shift mitochondrial dysfunction and that vicious cycle that occurs.

So these calcium gated channels that, again, are the core of the cell danger response, cause abnormal cell signaling. Poor mitochondrial function. So the body can't make any energy and you get cell toxicity and death, and it's really occurring in everyone.

It's just a matter of the degree that it's happening and who's sensitive. And for instance, if you just have just emfs, you're probably okay. But if you add in a chronic infection, you add in stress, you add in more mycotoxins, hormone deficiencies.

Everything's a vicious cycle. So, again, here's another study looking at people, living within 300m of a cell tower. All the symptoms that they basically had.

And again, it's broad based, which makes it, you know, easy to discount. Here's a they looked at interleukin six levels in technicians with long term low level EMF.

Occupational exposure compared to their counterparts working in the office. So the workers chronically exposed to long term, safe, so-called safe levels of emfs, were found to have increased levels of IL six.

So and that's where IL six has been in the news because of Covid as the major issue with who's going, to basically go on to potentially have forbidding mortality where the Covid infection is.

You can't turn off that IL six, you can't turn off that inflammatory cycle. So exposure work was shown also to increase the interleukin one B white blood count or RBCs means a volume.

So a number of different things. And you can see here when you look at the non exposed people here like they're basically at zero. Right. And as you get more exposed these levels just get much much higher.

And you can see just such a huge difference especially in these people that have higher magnetic fields. And they're talking about magnetic fields here.

Or we'll talk about both electrical and magnetic fields. So, yeah, basically they're they're causing emfs developmental delay, chronic illness. And it's really very similar to rapid aging.

And so prenatal exposure to 900MHz, which is like the cell phones result in dysfunctional thymus and spleen. And we'll talk about refinement. So the thymus basically in volutes, it's in your breastbone.

And when that happens as you age it you basically causes all the increases your, your risk and all these diseases that we associate with aging, diabetes, autoimmunity, cancer, all those things.

So the EMF just speed that up tremendously. Then you also get mitochondrial, dysfunction. So your body can't make the energy, which also it's a vicious cycle caused immune dysfunction, I think causes more mitochondrial dysfunction, increase in inflammation.

So they decrease glutathione own and, decrease your box, like, just, just be taste so your body can't get rid of these, inflammatory byproducts. Reduced natural killer cell function, which we see so much of.

You'll see that in, you know, Lyme patients, chronically ill patients where they can't fight interstellar infections. And all this is additive to it, whether it's stress, insomnia, diabetes, autoimmunity, you don't have the intracellular or immunity.

And that's where same thing monitor your body for cancer. So you get cancer, you get reactivating infections. You but you get lots of inflammation. Your body's trying to fight it, but it doesn't have the right part of the immune system.

Gut dysbiosis, which then causes, you know, basically a vicious cycle, increased permeability of the gut in the brain, cardiac dysfunction, arrhythmias, chest pain, hypertension, fatigue, depression, anxiety, heart dysfunction, headaches, A. D. D., OCD, infertility.

Tonight is osteoporosis, dirty germ diseases. We'll talk about all this. And everything is a vicious cycle. Now, this is like, oh, my gosh. And you really should be thinking, oh my gosh.

But the good news is, there are things you can do to mitigate and prevent the safe amount of EMF toxicity. One is, don't you stay as you can. You can't get rid of it because it's everywhere.

But you can do certain things to minimize your exposure. And when you ask like, oh, how much? Since 1917, they looked at the difference in EMF exposure, polarized EMF exposure since 1917.

And as people who oh, maybe a thousand times more. Nope. Nope. Million times no. Basically 1,000,000,000 billion. So ten to the 18 to 10 with also one with 18 zeros.

That's how much more emfs we're exposed to just since 1917. So very short period of time. This is just a quick one of, patients, that they had 37 year old, female long history of chronic fatigue syndrome, severe fatigue, insomnia, anxiety, cognitive dysfunction, night sweats.

She had pot. So, you know, when she sit up, basically low blood pressure, palpitations, initial cystitis, which is, inflammation of the bladder, which is a mast cell activation, swollen legs.

And so they get leaky vessels, and they also get the kind of the skin, if you see where you get kind of a lace pattern in the skin, with kind of purplish.

Really think of Bartonella. Urinary incontinence, hair loss, irregular periods, multiple food and other allergies and other multi-system symptoms. She was mostly house and bedbound.

She's been sick for over nine years. She said she had seen too many doctors to count. She had been diagnosed chronic fatigue syndrome, fibromyalgia, mast cell activation syndrome, part pre lupus, pre rheumatoid arthritis.

You to go to a rheumatologist you're going to get some autoimmune basically diagnosis. And you do find that you know, basically, you know, the chronic fatigue syndrome patients, the Lyme patients.

And now we're looking at MF patients or post-Covid patients that you'll have autoimmunity due to a number of different things. Oftentimes it doesn't fit into a little box.

But whether it's anti phospholipid syndrome it'll get multiple autoimmunity. But when you fix underlying immune dysfunction those go away. She again she had anti phospholipid syndrome.

Her Lyme test said was negative. But when we actually test her with a decent test, she ended up positive for Lyme, Bartonella, toxic mold. Here's a mean activation of coagulation, which I love to go into, but, that's for another day.

Sphere immune dysfunction. So she had, very low natural killer sub function, but lots of, low one, but very high. THG 817 applying for two chair dysfunction.

So a lot of hormone deficiency. But the standard tests of normal especially thyroid the TSH looks normal because the hypothalamus pituitary is not secreting TSH.

So doctors look at the czar if it's low like the thyroid is high. But in this case, which is so many people, the low TSH is actually associated with low thyroid.

Again hypothyroid. She had normal thyroid function tests. But when we did our tests where we look at their basal metabolic rate was terribly low. She was burning like, maybe, 60% of the calories that should be, should be

burning.

Throughout the day. And her thigh reflex, which measures the relaxation phase of, muscle reflex by a computer, and shown to be more accurate than blood tests for thyroid was extremely low, which is hyper metabolic, showing that mitochondrial dysfunction.

So, long story short, patient feeling much better, with, time-released T3.

Case Example and Vicious Cycle of Chronic Illness

She was on biased progesterone, between 6 to 8 peptides, ozone exosomes. She had short course of antibiotics. We tend to use a lot less antibiotics now, because we don't need them.

And we find that just, you know, I did on myself when I had terrible time and just bedbound and heart failure, you know, three and a half years of the highest dose of antibiotics I would never give a patient didn't do anything.

You know, until I fix my immune system poorly. Amber's positive. Colleen. So to had she had a dramatic improvement all her symptoms. But she can suffered from, this anxiety, insomnia and her natural killer.

So it was we couldn't get it above five. It should be above 30. And so ask her about her potential. Emfs sources. Is that no major power lines? She didn't know about any cell towers.

Or she did have a Wi-Fi router in her bedroom, and she sleeps with her iPhone and TV and her house alarm and smart thermostat and TV. So we told her to, basically turn off her Wi-Fi and if she could hit the breaker and, you know, basically put her phone on airplane mode and just take it out of the bedroom.

She returned several months later. Noted the significant improvements in insomnia. She feels that she's getting deep sleep, which she never felt that she got before.

Her anxiety was better and felt much healthier overall. And I just kind of just happened to ask, you know, what? She does a typical day, and she mentions that she goes out with her husband in his Tesla.

And I told her, well, don't do that. You know, drive your like a BMW gas powered. But she said she wasn't ready to drive. But she said she'll try not to go with her husband in the Tesla.

So we also adjusted a few things and, do some new labs, but, she came back three months later, said the anxiety was dramatically better. Since not being in the electric car, and she's actually able to drive now, her anxiety was down and she just was able to drive.

Wasn't, overwhelmed with it. So again, with the electric cars, it's it's a big problem, but. And this is from, when I was chief medical officer of the fiber optic center, so with 22 centers.

But in 2003. And this this still holds true. And it's this vicious cycle. And you look at all these things that just basically go in a circle and doesn't matter where you start normally, like with chronic fatigue syndrome, or a Lyme disease.

So it's usually stress has an issue with it, which unfortunately makes doctors think like, oh, it's not real because they're distressed. But I'll show you how.

Stress really doesn't lower the immune system. It modulates it in a negative way. But and then you get to Jeffrey Epstein with dysfunction and then mitochondrial dysfunction and then reactivating infections.

And it goes around and around. Now with Emfs, it's you basically down here with the environmental toxins causing the mitochondria dysfunction and immune dysfunction.

And you can just get in this whole chronic vicious cycle and kind of doesn't matter what the initial cause is, it just sets everything off. And so all these patients look, look the same on blood tests.

You look at a chronic fatigue syndrome patient, a Lyme patient and an autistic patient. And they have their immune system and their mitochondria are shocked.

And you fix that, they get much better. And so il6, again, very common denominator in this vicious cycle, where you get that immune dysfunction. So all these things here are associated with that one to, to shift even diabetes, obesity, cancer, infertility, hypothyroidism, and that these, two figures took me about two hours to do so you can sit here for a second and marvel at the wonder of them.

But so, so basically. Yeah. So you won the T regs or to lower the t to t seventeens or to high, so when you look at stress, we always think of stress as lowering the immune system.

But what it really does is cause the cycle with the T one with natural killer cell function to go down, but causes increased H2 with mast cell activation, increase inflammation so it's immune modulatory and then again becomes a vicious cycle.

So stress plays a huge part in all these things. And they all basically combine together in a vicious cycle. So you hear a lot about mast cells now. And it's a major concern for Lyme based kind of syndrome.

You know, spheres of course. Mast cell activation syndrome. Patient with Pots, it's basically out of balance immune system and direct mast cell inhibitors are kind of the mainstay of treatment.

But look upstream and fix the immune system. And then that mast cell activation gets better and emfs causing huge problem with mass cells. Let's go. Let's finally talk about peptides here.

So what are peptides. So peptides are naturally occurring or and long some short chains of amino acids arbitrarily if they're less than 40 or 50 or considered a peptide if they're longer they're considered a protein.

Peptides work different than hormones. Peptides are generally cell surface, signaling molecules that will, basically cause a cascade of effects where hormones go into the cell, go into the nucleus, change proteins, synthesis, basically, have the body, epigenetic change.

So slow on, slow off where peptides are generally fast on fast start. And so they tend to be much safer. So hormones work on specific receptors. The nucleus again affecting protein synthesis, where peptides are much more like vitamins, where they have multiple effects and where actually you think, well, multiple effects.

So that's that's a problem. But they tend to be much safer, like a vitamin where when you give a drug that has like one specific effect, it tends to throw everything off.

And that's where you have issues. But peptides in general are exceedingly safe. A number of them, you can't they can't find a toxic level a thousand times a typical dose that it's nontoxic.

Try that with anything. Try that with Tylenol or try that with water especially. So it's safe for them. Water. But they're very synergistic. They regularly regulate most every known process in the body.

We should think, you know, hormones were the master regulator. And but we're finding that the peptides are the much more precise modulators that that work with the hormones, but more of a, a another layer that is, more tissue specific.

Again, trying to make sure we save a 100 or 1000 full time and you don't see any drug or anything like that. An increasing number of peptides becoming clinically available.

So look at the different categories. So immune modulating peptides. So the ones that where we want the peptides

to essentially convert that where the abnormal balance of the immune system that low to H1 IDs to back to normal.

And peptides tend to be homeostatic, meaning that they bring the body back into balance. For instance PPC body pressure compound. 157 you have high blood pressure.

It brings it down if you have low bread, but your brings it up if you're hyper gradual, it brings down. If you can't coagulate, it brings it up. So they tend to bring it everything back into balance.

So again modulating like thymus and alpha one think mostly of increasing to one where the BPC think of mostly lowering T H2 and then thymus in beta four and tb4 fragment, which we'll talk about, think of more as modulating both of them.

And there's different thymic peptides come from the thymus. Time and time again, the timeline tends to be more, basically Anti-Flag Matri works great for people with herkimers.

And then you have also what works for immune monitoring are the, pineal hormones, EP Italian. And finally on and these will, basically modulate the thymus, also increase melatonin.

But they do a lot more of their they work very synergistically with the thymus, in terms of immune modulatory effects, sleep peptides, peptide and pineal gland, they will again raise melatonin levels.

And for people that can't sleep, there's a delta sleep inducing peptide in it, which sounds like oh, it's a peptide. You take it, you go to sleep. But no, it doesn't it it's not like a sedating peptide.

It basically reduces inflammation in the hypothalamus which calms down the sleep center. So if you don't have a problem sleeping it won't do anything for you.

But if you have a problem sleeping that you combine at Battalion the Delta sleep, it is a peptide we're finding with a growth hormone secreted. Gorgo.

I'm not going to talk a lot about those, but that's a whole nother area. But all of a sudden people are like, oh my gosh, I'm getting deep sleep. Especially if you're out of EMF fields.

And, being in electromagnetic fields, Garnet Tau's inflammation of the hypothalamus, which keeps from going deep sleep, causes insulin resistance, leptin resistance, weight gain, anxiety.

And then, add anti-obesity, a drug, is a fragment of growth hormone. But it's other effects. Brain peptides for memory, depression, traumatic brain injury.

There are Cmax, see link and we'll talk about those cerebral mice and which has been for i.v. And I am injection. But they made it a biologic now. So you can't get that in the US.

But it is available orally. De Hexa is a, it's a synthetic, angiotensin one seven analog, which, but it helps memory. And all these are very synergistic, by the way, quantum secreted dogs, again, most are natural, but, some of those synthetic antimicrobial peptides I won't get, too much into L 37 is natural boost in the body, but also thymus and alpha one is approved in 30 or so countries for hepatitis, HIV for cancer, the TB for TB for active frag, very antimicrobial BPC 157 shown to be more potent antiviral, for instance, against the herpes virus than a cycle avere at 1/100 of a dose.

But people tend to not think of it as that because it has so many other effects of healing. But it has it. They're very antimicrobial, just kind of general rejuvenation.

But the protection compound, what will go to that? It tends to heal so many different, systems in the body. When you take it orally, it works systemically.

As well as TB for they work together. That's more of again, that thymic peptide or TB for a fragment is the part of TB for that's immune modulator. And it's actually orally active and takes out a part that stimulates mast cells.

Italian. And finally on, again, the pineal, hormones that sleep inducing peptides, growth hormone releasing mitochondrial peptides. So I'm not going to go into much detail, but not C 5,000,001 in Q human.

SS 31 tons of studies are actually being conducted now on reducing neurodegenerative diseases and so many different issues by reducing mitochondria. BBC 157 actually, prevents they calcium, voltage gated channels from being over activated.

So very potent actually mitochondrial protecting peptide two before anti before frag. And then the one two tropic peptides. So alpha monocyte signaling hormone.

And there's B'Elanna ten one and two which are analogs of alpha monocytes. So many hormone which stimulate your body, the melanocytes to get tan in response to sun and then land tan will do the same thing.

It's the analog of that. But it also will reduce inflammation, increase libido. Decreased body fat. So you get tan, increase libido and you get skinny is what's called the Barbie doll peptides.

But you the tanning part tends to be an issue if you're older because it will bring out kind of age spots and things like that. Now CP v is just a three amino acid part of alpha monocyte stimulating hormone, and it has all the actually even more anti-inflammatory effects that alpha monocytes similarly hormone does, but it doesn't stimulate the monocytes, which is great.

And it's actually orally bioavailable and hugely, basically anti-inflammatory. So mast cell issues and we'd, just, copy these now available and, we're having great success with that.

And patients are loving it and doctors are loving it. Side effects is some nausea. Really? That's what kind. 141 so that's actually approved as a drug for female libido.

But does it definitely works for male rectal dysfunction. But you tend to get nausea with the other ones. Not so much. So, so emfs really they accelerate aging.

And now even when you look at aging, according to the CDC. Okay. Approximately 80% of age individuals are afflicted with at least one chronic disease as a result of the decline in the thymic related immune function.

So, so 80% of aged individuals invasively suffer from a, from a, you know, basically, illness because of their thymus is no longer working. So many things have negative effects of the thymus and pineal gland function as well.

Age, genetics, inflammation, emfs, just speed that process up again. They speed up the aging, diet, you know, bad diet, lifestyle, stress, toxins, low thyroid, low growth hormone, zinc deficiency.

Peptides as a Therapeutic Strategy

All these things can speed up this, this thymic involution, which causes, basically the immune dysfunction. So you basically end up aging faster and getting a lot more of these multi-system, degenerative diseases that you tend to see in older individuals.

But you're still young. So thymus involution, basically starts around age 15 and, around 40 to 45, it hits, it hits a low. And so you get again where you get that immune shift.

So increased ability to infections. You more autoimmune disease, more cancer, cardiovascular disease, more inflammation. And you can see here the famous as you age, it just starts dropping right around to age ten, 15.

And then by 40 and usually right around between 40. And that's where you start getting the red line here that I

drew. And you can tell it's not, actually done, but you get the point that where this is the increase in, basic diseases of aging, you'll get childhood diseases, you'll get a bump and diseases here.

And then diseases of aging just rapidly increase here because of the famous. So let's fix the thymus. And, with stress. So I think I went through this, where the, the stress is a major immune modulator.

So the thymus, since they again modulate the body to be more, immune balanced, see if repair, restorative and healing properties, maintain normal anti-microbial activity, boost mitochondrial function.

Again, you'll see all these things connected. Thymus works by activating secondary messengers, stimulates wound healing. Stem cells, stimulate stem cells, increases antioxidants and go, production.

Needed to maintain a healthy, GI mucosa. So really a combination of BPC 157 is kind of the go to for gut inflammation, but also inflammation throughout the body, but is known for that.

But the the tb4 fragment, you can take orally works from the tight junction. And we're finding curves in one very anti-inflammatory really heals the gut very quickly.

And a big problem we're finding with Lyme, all these, you know, is this information is basically brain on fire. So micro glia activation. And so you'll find with BPC 157 the thymus and beta four times a beta for frag KB.

The lower the micro glial activation the cerebral Eisen. So the brain inflammation goes away. And you'll be amazed at how many symptoms go away when you reduce brain inflammation and inflammation, particularly the hypothalamus.

Is what causes, insulin resistance and diabetes, by machines. And also BPC blocks the effects of neurotoxins, endotoxins, mycotoxins, they boost natural killer cell function.

And so thymus and beta for is a long molecule. And so, 43 amino acids as different parts that do different things. So what they found is that the fragment one four possesses all the immune, modulatory and antigenic and healing and anti-inflammatory and cellular protective.

But it takes out the part that stimulates mast cells, and it also now becomes orally active because it's very short a long peptides not going to absorb even short peptides can be difficult to absorb.

But this one absorbs whole and is clearly totally bioavailable. And you get all the benefits. Some beta four, which you normally have to do with the shot, but you can take it orally and it's about ten times as potent as well.

So, it's more potent anti fibrotic. So it will prevent like diabetic cardiomyopathy, diabetic nephropathy you know, or kidney damage from diabetes. Again it's ten times as potent per weight.

It doesn't stimulate mast cells as orally active. It crosses in the blood brain barrier is much smaller where CD4 is too big to cross, gets into biofilms and breaks up biofilms.

It inhibits trapping a growth factor, beta induced plasminogen activator inhibitor. So it prevents that hyper pliability, which also BPC 157. And we actually if you check the violation status of chronic Lyme patient kind of syndrome, patients about 80% plus have immune activation of coagulation.

So what's happening is you're laying down or not causing a club laying down fiber and trying to wall off that infection, which is good in the short term, but long term. Now the body can get at it.

And also nutrients can't get in and waste product. Take it out a notch that usually takes two seconds to get into. The cells can only get the two minutes, so the cells are also starving for oxygen.

So, cleaning up that fibrin actually with either, really low dose heparin, which safer than aspirin or also, you know,

with immune modulating also some of the vascular enzymes will help, but, it's another again, in this vicious cycle that we see, and a lot of times when nothing's working, the patient will still say, hey, I got good news.

Bad news, good bad news is you got I mean, activation regulation. Good news is you got a mean activation of regulation, and we can trade all of a sudden treatments that weren't working because whether it's a hormone or a drug or nutrient wasn't getting in the cells.

Also, you clean it up. Now it gets into the cells, and starts working. So here it's just, basically these are amino acids, famous before and then Tb4 active frag is the first four amino acids.

They're BBC 157, you know, and these two are kind of the go to and kind of like core treatment, and available as, a supplement. It's a 50 amino acid which normally would not absorb, but it is basically, secreted in the gut.

So normally we also most peptides things are broken down with the enzymes. And with the acidic gastric, juice. But this is very stable. That's where it's, that's where it's made.

So it's resistant to hydrolysis and enzyme digestion. It's shown to have a wide range of healing mechanism. It's almost embarrassing showing the studies because it sounds like snake oil.

Like name it. It kind of. But to help seal it, but it really changes epigenetics the body into a healing, basically turns on all the genes for, for healing, lowering inflammation, you know, improving the immune system, gets increased blood flow, to, to areas that are needed.

Yeah. It, modulates the, neurotransmitters. Great for leaky gut. And again, the gut brain access. And it's great for the microbiome, oral systemic, administration, shown to improve cardiovascular issues, blocking many of the toxic effects of emfs, including the immune dysfunction, mitochondrial dysfunction, excessive reactive oxygen species.

And again, by inhibiting that abnormal activation voltage gain of calcium channels. And I'm telling you, for I know there's a lot of you out there that are suffering from whether be seizures and chronic mold kind of like syndrome, chronic Lyme and just have palpitations all the time.

Get out of the MF, fields and take VPC to block those calcium channels, which are also up to mitochondria. And you can just get again, it's the start of this whole multi-system treatment.

So works for heart failure, hypertension, hypertension or hypertension. You know, I went to heart failure with chronic Lyme and the cardiology said I may be able to get 10% better in ten years.

I couldn't stand up, straight. I couldn't like walking up stairs. Forget it. Taking, like, an hour. I can't live like this. And that's when I went basically around the world looking for treatments, and that's where I found peptides.

But, and I went back a year later and my heart was normal, and the cartilage says, oh, my gosh, I've never seen that. Of course, she's even asked what I did, but she's never seen, it actually prevents arrhythmias, shortens that, two t interval.

Which again, with Covid, you may be hearing about, you know, the cute interval, with, Citra max and hydroxychloroquine. We look at that, but actually BPC 157 will shorten that, as does thyroid.

But BBC 157 also, well, is great for arrhythmias. We had one of our employees has been, it was an a-fib and gave him a big shot of BPC 157 and broke his AFib, went back into normal sinus.

That works for central peripheral nervous system. Treating neuropathies, and all they, you know, with EMF associated with them will look at, you know, traumatic brain injury, Alzheimer's, Parkinson's, neuropathies, peripheral nerve damage, mood disorders, and shown to be a better antidepressant than any depressants, blocks an exaggerated stress response for constant fight or flight.

Let's see. So I think that seems like. So, yeah, just even a brief period here, seven days after just a brief exposure. From a mobile phone, they found the blood brain barrier opened up.

So again, we have the brain is protected by a, were called the blood brain barrier, which makes it difficult for certain things to get into the brain.

It protects the brain from toxic substances. But if you're an EMF field, it opens it up. And also, you know, leaky gut ends up being leaky brain and vice versa.

So, and some of these studies, just to our exposure to a low level cell phone level, in rats found immediate disruption of this blood brain barrier, protection increased permeability ions, big molecules, even albumin, which is a big protein to be able to get in and out.

And it's crazy. And the just a brief exposure for a couple hours, the increased probability for two weeks. And they also found significant brain damage was found 20 and 50 days after, the exposure and the rats, and if, if they were to give anti glutamate antioxidant therapies to help prevent some of that permanent brain damage, but not all of it.

And anyone who was already sick, it actually it was much worse for them. And that's what you see. And so with the in terms of the microbiome, we hear a lot about the blood brain, access.

So the microbiome affects the neurologic system and really most every system in the body and also but the brain can determine what the microbiome is. So again, it's a two way street.

So if you have leaky gut, you have leaky brain, almost instantaneously. Now radio frequency, radio frequencies similar to those emitted by mobile devices or Wi-Fi, typically cause pathogenic bacteria.

It's E coli Listeria. They grow faster and become more. Is the antibiotics I mentioned that causes toxic mold to grow faster and secrete millions more of, mycotoxins.

It's it's crazy. And so here's, basically look at the blood brain barrier. So numerous studies show an importance, and looking at PPC, 157 k pv, TB for active fag, those combination works on all the different parts of the, dysfunctional, the leaky gut and thus leaky brain.

Studies there. And then we get into the microbiome. So the viruses that are in there that, they're called phages that feed on the bacteria that it's exponentially more complicated.

But we haven't heard about that yet. But you will, So you'll see, that is, we already talked about that. So ABC1 57 stabilizes the gut nervous system.

Which we talked about so much of the safety attention is really the looked at, again, ionizing radiation, which powerful enough, to break up DNA. Where.

So it's found that anything less powerful does not cause DNA or, or damage. But that's not the case. So even short term, low level exposure to non-ionizing radiation, well, within the safety limits has been shown to cause DNA damage, increase in what's called senescent cells.

So the cells just basically they're sitting there, they're dysfunctional. They're a mitochondria dysfunction. They can't do their job, but they're secreting all this inflammatory, byproducts and causing a lot of problems.

Those are ones that turn to cancer. And and basically what they don't have enough energy to even go under apoptosis or really die and get rid of those.

So, they get basically, we get the mitochondria going. They can actually go into what's called apoptosis and get rid of those old cells that are causing all these problems.

So free radicals, especially interaction with transitional metals like, iron and heavy metals, play a big role with EMF toxicity on DNA. So if you have these metals that, you know, Fenton reaction, or with heavy metals that you can get DNA damage.

Certainly. So here's basically just looking at the incidence of glioma. So, brain tumor and the amount of cell phone use. And here's looking at, the famous ends, and the pineal peptides, battalion and pineal and, and cancer reduction.

So, with five minutes you get so you have an increase in lifespan and, also boost which correlates with the boosted immunity and the pineal gland. Same thing.

So increased lifespan, increased immunity. They go together. So demonstrated the high efficiency of a battalion, therapy for prophylaxis of age related pathology, including cancer, showing a new physiologic way to slow down the pathological process and to extend human lifespans.

Quote there, from the studies below. And this is they just basically injected, priming protein into my serving at age 3.5 months. They found that increased lifespan by 20%.

And decreased rate of cancer by 2.8 fold.

Thymic and Pineal Peptides for Immune and Aging Support

In terms of they had, cancer, a few female mice where they had their bred to have the breast cancer gene. So genetic prone to breast cancer, they received a battalion five times for week from the second month of life.

And the percent of mice to develop cancer was 3.7 fold higher in the control. So a 73% reduction in cancer in the treatment group, it decelerated the rate of aging of the reproductive system as well.

But only 8% of mice having a regular menstrual cycles was 52% of age control. So, it's actually very good for, people with infertility. This is looking at, age related insulin resistance.

Also neurotransmitter levels. So, a battalion, improved insulin resistance. This is in rhesus monkeys. The melatonin levels also, basically went up to, that of young animals.

So the older animals looked like younger animals. And the area under the curve of the glucose challenge was, on average, 294 in the young monkeys versus 479 in the old monkeys.

So they had a lot of a lot of insulin and glucose. When they get to a battalion, normalize that glucose area under the curve. So significant improvement in insulin resistance or improvement, insulin sensitivity, I should say.

The authors conclude. Upton obviously shows promise is a remedy to restore age related endocrine dysfunction in primates. Very safe. Don't see any side effects from it.

Stimulates the synthesis of serotonin and melatonin. Restores telomere length. So the cells ordered the by the need. The telomeres keep shrinking every time it divides.

And when those are too short, it can't divide into actual length. And those and so your cells are actually younger. So so the age and reproductive system actually increases T4, T3 conversion and also increases thyroid production and preschool.

The tolerance we just said slows aging, increase longevity, protects against senescent cells and cancer activates gene expression. So it basically makes them makes the body younger.

It's probably the best anti-aging. Substance that we know of. So the derivative effects of, thymic, peptide timeline and pineal peptide Epstein were investigated over a 6 to 8 year period, 266 elderly patients, after being treated for

the first 2 to 3 years of the study.

They basically found a 2 to 2.4 decrease in acute respiratory disease. So they had improved immunity, reduced incidence of clinical benefits of chronic heart disease, a less cardiovascular disease, less hypertension, less, degenerative diseases, osteoarthritis, osteoporosis compared to controls.

So such a significant improvement in state of the peptide treated patients correlate with decreased mortality rate. During the observation, basically, two fold decrease in mortality, in the final and treated group, 1.6 to 1.8 fold in the Italian treated group.

And when there she with both the 2.5 reduction now a separate group that was treated with peptides for six years for target was decreased, was one fourth compared to controls when he put those together.

So EMF effects on the brain significantly impacts, memory learning anxiety. Even at these so-called safe levels, with structural and physiologic changes in various parts of the brain.

Again, observe the blood brain barrier, the hippocampus, which is very responsible for memory and learning, is very susceptible to oxidative stress and EMF toxicity.

The cerebellum, the amygdala, which is kind of that, like kind of basic drive, and also cerebral cortex. So, higher functioning and activation of the glial cells.

So again, again, the brain on fire, with brain inflammation, also neurotransmitter levels, so possible cause for cribbing with the EMF. But what does it do?

It increases reactive oxygen species and can increase the permeability of the gut in the brain. Activation of the, empathetic pathways. It causes cell death effects on the DNA.

You get direct damage and also epigenetic meaning that it turns on and off genes that cause damage, that calcium influx across the membranes. So it's like a common of all these things causing significant problems.

So, a study here, they exposed pregnant mice in utero to a mobile phone, just on active call mode. Throughout gestation, the offspring were shown to have memory impairments, hyperactive behavior compared to unexposed mice.

Another one here exposed. 28 days of just the mobile phone. Altered neurobehavioral performance, impaired spatial memory, damaged blood brain barrier, Impaired.

Learning and reference memory. They also found brain damage in the hippocampus. So all these things from so-called just cell phone exposure, neuronal, you know, degeneration, all these things from so-called safe levels of just cell phone.

So here's, basically groups, in terms of time it takes them to complete a task. And the more exposed, the longer it took them to, to learn a task. And looking at Alzheimer's, neurodegenerative diseases.

There's just so many studies here, looking at the ratio here, you know, five times a risk for people that have high EMF exposure. Numerous studies all showing, nerve diseases, suicide, depressive symptoms at MPs, ALS, strong data showing EMS causing ALS.

But the nice thing is CB4 is shown to reverse that. So TB for TB for active frag, whether it's, neurodegenerative diseases, peripheral neuropathy, diabetes, traumatic brain injury, talk about basically nootropic peptides or cerebral license.

So let's say mixture of neuropeptide vides. It's been around for 40 years or so. Tons of studies on it. It's approved in 44 countries for treatment of dementia and stroke.

Very neuroprotective. Very neuro reparative penetrates the blood brain barrier, because they're small molecular weight, peptides, they stimulate centrum peripheral, all nerve growth factors, they improve cognitive function.

Lots of studies on traumatic brain injury, Alzheimer's stroke shown to be effective in, Alzheimer. A student with autism and Asperger's on the spectrum disorders, historically given intravenously, but, no longer available.

But it is bioavailable orally. It's just a study on Alzheimer's showing the improvement. Here's in terms of reducing micro glial activation so that brain inflammation, the identification of new compounds with neurotrophic properties, becoming a new strategy for the prevention and treatment of nerve genetic disorders.

In this study, we described use of two different models demonstrate the ability to stabilize to reduce microglial activation. The results of these in vitro and in vivo studies indicate that circulation might exert, neural, you know, trophic activity, reduce the extent of inflammation and accelerate or, accelerate neuronal death under pathologic conditions such as those observed in neurodegenerative diseases.

Another study here showing that oral circulation, basically a single dose, significantly improved the cognitive performance of elderly individuals. C link and C max are very similar.

See, Max will help with memory as we'll see links. He links more calming will also help deal with stress. So we like to give that when people are anxious it also reduces brain inflammation as well.

They stimulate nerve growth factors. Shields a body from neurotoxins as well. Predict, protective against stress and depression. Improves memory and attention even in healthy adults.

Beneficial learning and memory increases actually dopamine and serotonin levels, which decline with age, improved recovery from stroke. You get neurologic regeneration increased, dendritic basically all the connections, I have never seen side effects from these.

And looking at the cardiovascular system, I, mentioned how so in patients, those palpitations, if they can get out of the, MRI field, especially with PTC, often those palpitations go away.

And they kind of get out of that sympathetic fight or flight, response. This is just showing that how the emfs add that immune activation of coagulation where just exposing the blood, just the person's blood to EMF, feels they start clumping, after ten minutes and 70 minutes.

So significant effects. So this is a person who basically was, EMF sensitive. They have the person sit in a room and then turn on and off the wifi. So basically, pulse at 68 and then all of a sudden turn on the cell phone, go to 122.

They turning on the cell phone, goes back to 66, turned back on the cell phone.

Brain, Cardiovascular, and Thyroid Effects of EMFs

129 and then also so they found that really you get that again, that sympathetic parasympathetic where all these illnesses are causing just that sympathetic overdrive or just fight or flight, instead of that coldness and again, not getting deep sleep, the brain on fire, and this person would actually go into arrhythmias, with the emfs.

So uptown with cardiovascular disease. So this is trial 79, patients age 60 to 69 with severe cardiovascular disease have them receiving the six courses of Ed Battalion, and they all the patients continue their standard basic therapy.

Over so far for 13 years, the cardiovascular functional age was 16 years older compared to seven years in the uptime group. So it really kind of slowed that aging.

And the, mortality rate was about half that of the control group. So cut mortality in half. They, actually increased their endurance while the control group declined on their endurance.

And they also had normalization of their circadian rhythm. So it increased melatonin. They, slept better, more, centered sleep cycle, you know, so as you get older, you kind of lose that sleep cycle.

So from back to that younger, nice awake sleep cycle, improved carbohydrate, lipid metabolism. This is, showing that TV for frag and BPC prevents EMF induced cardiovascular dysfunction.

So they, the Tbe for active fire cardio protective effects and diabetic subjects reduce both ventricular, interstitial and vascular fibrosis, oral and systemic conditions.

The BBC 157 CV proves a wide range of cardiovascular. It's by blocking and many the toxic effects of emfs including that when a conduit is functioning excessive reactive oxygen species and inhibiting that abnormal calcium voltage gated calcium channel so helps with heart failure, hypertension, hypertension, post MI damage, arrhythmias, vessel repair.

We talked about acute interval. So also we're finding, you know is that really with Emfs everyone's exposed to is that everyone fairly low thyroid actually multiple hormone deficiencies.

So you look at that 72 Hampshire divided into three groups. The control group. And then group two was exposed to cell phone EMF for ten days. Group three was exposed to cell phone EMF for 50 days.

They tested for and T3 and cortisol levels, the cortisol level and 50 day exposure went up. So they had that increase in the in the cortisol. The stress response.

But they found T3 levels, were higher the control group. So the T3 levels in the exposed group dropped. Now the T4 levels went up. And so doctors think well higher T4 means that there and especially when the TSH is lower, they just in this study.

But I can pretty much guarantee the TSH drop. But we'll see in the next study. So low TSH high T4 doc score high thyroid. It's actually low thyroid because they have hypothalamic pituitary dysfunction.

The body is not producing TSH. Then on top of that with the mitochondrial dysfunction you need active transport for the T4 to get into the cell. So the high T4 shows that it's not getting into the cell.

And you can see that by the the T3 and the T4. Thyroid transporters are different. The T4 is more energy dependent. So with low mitochondria function it doesn't transport T4.

It much more affected. Now reverse T3 is the same farmworker, the same farmworker as the T4. So with high reverse T3 it's not it shows us not getting into the cells for high reverse T3.

You know T4 is not getting into the cell. So that's why all these patients do so much better with straight T3 because although it is somewhat affected not nearly as much as T4.

So. But doctors look at their TSH being low normal and their T4 being high normally go, oh well you're kind of high thyroid. No no no they're low. So it's it's the opposite.

So here are they said the authors stated that the high cortisol resulted in decreased T4 to T3 conversion, which is true, but that's not the main problem.

You do get less T4, T3 conversion, but the big problem, the cause of the high T4 is it's not getting into the cell. And again, Emfs causes mitochondria dysfunction along with other things, chronic infections and then causes immune dysfunction.

Low thyroid. Then you basically get all that vicious cycle. And then so different study here. So the major trigger of 84 is a lack of T4 transport. So we assume that they had low TSH.

But, so everyone really exposed. If you want to learn more about this, go to our nonprofit, National Academy of Hypothyroidism and hypothyroidism.org where a couple review articles on this.

I'm just kind of throwing it out there. But another study, where they exposed, to cell phone for 30 minutes a day for five days a week, for four weeks.

One group basically has control. Another group as the sham so falsely exposed teens, they see, two, three and four levels of measured as expected, the TSH in T3, follows the lower in the EMF groups.

So the T4 can either be or high, normal, normal or low depending on where they are in the chronicity of the illness. But so the T T4 is not the proper treatment for these patients.

So TSH was lower. Their T3 was lower. And in this one their T4. But T4 can be their high. Because they have you actually have less T4 because the TSR is the thyroid is producing less T4.

So you're competing, with not getting in the cell. What's going to win out in terms of serum levels. So serum level does not tell you what's inside the inside the cell, which is what matters.

Another study showed male volunteers exposed cell phone fields for two hours a day, five days a week for one month at a 21% reduction in TSH levels, showing central hypothyroidism, which would again be missed by the majority of physicians, showing here that giving up Italian brought melatonin levels back to normal.

And I know I'm going long here. The one recorded alpha monocyte stimulating hormone. L'antenne one and two. We talked about k pv. So a fragment of that very potent immune modeling anti-inflammatory inhibits mast cells.

It actually reduced the hypothalamic inflammation. So you get reduced insulin, leptin resistance. That's a sleep inducing peptide. Does the same type of thing.

So like when you take it it doesn't put you to sleep, but over a couple of weeks will lower that inflammation of the hypothalamus. And where you can actually get deep sleep.

And also the delta sigma peptide is highest is the highest levels of the gut. So it lowers inflammation there as well. And just I'll mention GHQ, you'll see that a lot in cosmetic.

It helps heal skin and produce collagen anti-inflammatory also helps with hair restoration.

Summary and Practical EMF Mitigation

I'll just mention that we like the mitochondrial peptides, which include, well, BPC 157 protects the mitochondria 5,000,001 and two is some great results with like, bipolar and OCD.

Mozzie is another one. Again, TB for free. I guess it's 31. Increase metabolism. Neuroprotective, increased stem cell function increases nad. So really, you know, peptides, very synergistic, with each other.

Here again, with 5 million in a battalion. And I think we looked at that study here. And so to summarize, and I know I went way over and I apologize for that, but, I hope I gave you a little taste of the problem with Emfs and hopefully, you know, one way to counteract that and a lot of things is using peptides, but also, you know, try to minimize your exposure to emfs.

They contribute to a wide range of illnesses and immune dysfunction, and are a key component, a vicious cycle of multi-system illness. The key is, is healthy, balanced immune system known by the gut brain access to core contributor and, improper function, deficiency of, certain peptides.

Again, their natural in your body, which they decline as we age, can can heal and protect you from toxic exposures. And, works well in a multi system treatment.

So in terms of dosing those get asked that I want to just quickly show those again is one get twice a day. But it's you can't basically overdose on those if they have Gerd up the capsules.

But I usually do BPC 157 and then add in TB for frag and then add in whatever in particular if they have, if they need, no trouble for memory. When I like the cerebral I said I have lots of inflammation and the Cfpb or the, you know, battalion or pavilion, whatever it may be.

Or maybe an anti-microbial agent didn't talk much about, mitochondrial peptides. Again, you know, nicely with peptides. You can't go wrong in terms of the different orders that you're not going to screw it up, that it kind of, and ends up working out. But, that's it.

Again, I sorry for going, I think way over my time, but, hopefully that, we got a little taste of all the literature that showing the issues with Emfs and how to hopefully, prevent, the toxicity if you're having any issues.

I hope it helps. So, wish you all the best health. And, hopefully you're enjoying the summit. And thank you for letting me be a part of it. All right. Thank you, I might.