



UNVEILING

THE POTENTIAL DANGERS OF
EXPOSURE TO EMF

Kara Kieley and
Marco Simeoni



Unstress HEALTH

with Dr Ron Ehrlich

Podcast Transcript

Dr Ron Ehrlich: [00:00:00] Hello and welcome to Unstress. My name is Dr Ron Ehrlich. I'd like to acknowledge the traditional custodians of the land on which I am recording this podcast, the Gadigal people of the Eora Nation and pay my respects to their elders, past, present and emerging. And as I say every week, and I truly believe this. We have so much to learn from our First Nations people about connection and respect to everything, really the land, each other, our history, our environment. We have so much to learn.

Dr Ron Ehrlich: [00:00:38] Well, today, we're going to explore EMF radiation, electromagnetic fields, electromagnetic radiation, which we surround ourselves with. Each and every day of our lives. It is when we electrify our home when we make it a smart home where Wi-Fi connects all things. The Internet of all things. And the thing that often intrigues me and I'm... look I surround myself with technology. So please, this is an exploration for me and as I've often said, each week I get to ask people that know much more than I do on subjects that I'm interested in. And they ask... They answer those questions and I learn so much, and I hope you do too. But let's face it, every cell in our body is an electric current, works on electric current micro currents. That's how things get across cell membranes. That's how things get transmitted along our nerves. That's how our energy is produced in every cell of our body. So to suggest that electromagnetic radiation or frequencies have no biological effect is naive at best and negligent at worst. And so today we're going to explore that. My guests today are from Spectral Design, a company that focuses completely on this subject. Marco Simeoni started as an electrician working in one of Australia's largest-scale government infrastructure enterprises.

Now, Marco, like many people in health, developed a debilitating chronic health condition. After finding no solutions in mainstream medicine, he went to find alternative ways to heal himself, a journey that took him around the world. And through this time he discovered the biological effects of environmental stressors and their impact on the body. Now, that's a subject that we've explored many times for many different perspectives. And as you know, if you've followed the program,

environmental stress is one of the five stressors that compromised immune function promote chronic inflammation. But I'll continue by reducing his exposure to manmade electromagnetic fields and artificial lighting. His healing process began and became an instrumental part of his journey to health. His motto is to live in harmony with nature, akin to our ancestors before us, to live the way our biology intended. And after completing his EMF study with the Australian College of Environmental Studies, that's Nicole Bijlsma is the principal of that college. She's been a guest on this podcast many times. In Australia, he then undertook countless hours of further research and study with scientists, practitioners and engineers.

Dr Ron Ehrlich: [00:03:27] Now this is the case. Once we finish our study, our learning really begins. And Marco's a good example of this. Now Marco has successfully combined his skills as an electrician with the principles of low EMF environments to help his clients all over Australia. He's passionate about developing new solutions such as the successful home dirty electricity filter that is powerful enough to filter solar inverters and incoming dirty electricity for the power just from the power distribution grid. Now we talk about dirty electricity. We talk about what that means. We also talk about solar inverters, because as you'll learn, the solar panels on our roof are a DC current and we need to convert that to an alternating current. And that's what the inverter is and it has the potential to emit electromagnetic radiation as well.

My other guest is Kara Kieley. Now Kara discovered the importance of building biology when she became ill in her own home for an extended period of time without realising that mould was proliferating behind the walls. Now we've done many, many what? We've done several programs on mould, and I would recommend that you go back and have a listen to it because that is a... An easy one to miss. But if you sort it out, it can really be life-changing after this mould exposure. Kara became sensitive to electromagnetic fields in a way that she had never experienced before. And this is the significance of all these stressors, because as one mounts up on the other and compromises immune function and promotes chronic inflammation, we lose our adaptive capacity and our resilience, and we become far more susceptible to a whole range of issues. Has a health

practitioner with a Bachelor of Health Sciences, Services, rather, Kara experienced firsthand the impact of environmental causation to overall health, specifically within the indoor environment. Dr Ron Ehrlich: [00:05:34] Now, it's sobering to know that while you might be overcome by the enormity of climate change and environmental degradation, it's also sobering to know that by making informed decisions, you can reduce your environmental stress in your own home, which is the main source of environmental stress by 80 or 90%. So this is a real classic example of having control, more control than you think. This led her to complete an advanced diploma of building biology in Australia and then specialise in electromagnetic fields. After further study at the Building Biology Institute in New Mexico, USA. Kara strives to help educate people on the impacts of hazards in our home. A very important topic and why they need to be considered in a holistic approach to health, could not agree more. She is currently the main lecturer for electrobiology component of the Advanced Diploma and Building Biology Course at the Australian College of Environmental Studies. I hope you enjoy this conversation I had with Marco Simeoni and Kara Kieley.

Welcome to the show, Kara and Marco.

Kara Kieley: [00:06:51] Thanks. Thanks for having us.

Dr Ron Ehrlich: [00:06:53] Well, listen, this topic we're talking about is something that is constantly affecting us all. But I wonder if we might just start with some basics because we're talking about the electromagnetic spectrum and we know visible light is part of that. But what else? Before any electricity came along. What will we expose to as humans walking the Earth for hundreds of thousands if not millions of years? Where was our starting point?

Kara Kieley: [00:07:19] So essentially, our body is kind of adapted to a lot of natural radiation. So we've got the Schumann resonance. We've got the Earth's natural magnetic fields, which are DC current. We've got sunlight, obviously. So we've had a lot of EMFs that we were kind of

accustomed to and that we kind of try to get back into how those impacts and how those yeah, how we kind of evolved with that. So that's kind our...

Dr Ron Ehrlich: [00:07:48] Mm-hmm. What about Schumann's? I mean, that's about... The Earth has its own frequency. That's what we're talking about there.

Marco Simeoni: [00:07:58] Yeah. So there's a lot going on. The Schumann resonance is basically a result of lightning. So you get about 50 lightning strikes a second globally. And what you have is like a cavity between the Earth and the ionosphere. So basically, you get these standing wave effects as a result of that lightning and that was discovered, I think, around the fifties, around then. So, yeah, that's one of the ways one of the fields that we've been exposed to. There are scientists that theory... Theories that we sort of sync up with that with our brainwaves. They are in a sort of similar band. So, you know, that is definitely a possibility, I'd say...

Dr Ron Ehrlich: [00:08:37] Yeah.

Kara Kieley: [00:08:39] And one of the ways that we realised how important it was as well when they sent astronauts into space and realised that they get really sick if we don't actually have those frequencies that we're exposed to.

Marco Simeoni: [00:08:51] Yeah. And the protective layers and stuff as well. Yeah.

Dr Ron Ehrlich: [00:08:54] Yeah. Because we've evolved over, over millions of years to the point when we ended up with electricity in, you know, I think it was around the late 19th century in our home, in our office, in our world. What are we actually exposed to now?

Marco Simeoni: [00:09:14] So, yeah, so look, we were only exposed to DC, so the natural frequencies were all direct current. Now we've gone and created a way of using electricity, which is AC. So that means alternating current. So the way to, to differentiate those two is with a battery,

the power will go from one side of the battery to the other and that's it. Whereas with AC power, the power goes back and forth like that. It's sort of just, you know, basically the whole grid, the whole electrical grid, the... You have current, which is just doing this and that's why it's an alternating current. It just changes instead of just the way it'll go by. So we brought that in and basically the natural fields we were exposed to, one of the main ones is like the Sun's photons, right? So we had a natural spectrum, the visible spectrum. Then we've also got UV and infrared, which make it through. Now we evolved to those frequencies, we developed biological systems and we developed a circadian clock which harmonises us to nature basically.

Marco Simeoni: [00:10:25] So we messed with that completely. And when we started to bring in like incandescent globes and stuff like this, what you get with those is you get some blue of the spectrum, some blue and green, which previous to having those that I see introduced, we were just using flames basically as a light source, so minuscule amount of blue and green candle. So we've now introduced blue and green into that spectrum. Now blue and green has been shown to suppress melatonin production. So basically how it used to be is. You wake up to the sun's... To some sunrise, and then that will trigger certain biological processes in the body. You start to produce tryptophan, serotonin and stress hormones. And then at night, in the absence of blue light, that serotonin that's created during the day will convert to melatonin. You start yawning and you go to sleep. It's a natural circadian process. So we've disrupted that with green lighting, and that's just throwing everything out, basically straining the system. So then the other issue with having that was the fact that the lights just flickering on and off. So we use a 50 hertz AC power in a home. So the power cycles 50 times a second and it's at 240 volts.

So what you have back then it was incandescent lighting the lights would literally sort of turn on and off a hundred times a second, 50 one way, 50 the other. So we're not used to that. So the brain's got this constant flicker and so it's a stress that you go into it because you got to filter that out and there are studies which show like negative effects. So that was lighting and then in terms of, like AC, the issues with AC powers is, what you have is this expanding, collapsing field around all cabling, all appliances, the transmission lines in the street is expanding and collapsing electric

and magnetic fields. And, you know, I'm just an electrician, I'm not a physicist. But like if you if you look at physics, you'll see that it's changing fields, which it's called mutual induction. This is my guess on... Look you can measure these effects. It's just a guess on the actual process which is causing it. I think it's via... Just in simple terms, it's something called mutual induction. So as the field will expand and collapse, you have a changing field. It's been... it's very clear in science, in physics that a changing field can induce a... The same field inside a conductor. So basically the human body is a conductor.

Marco Simeoni: [00:13:09] Now, if you stand in parallel with like a light switch, for an example, and you've got this changing field and basically that field will appear in those frequencies will appear in the body. Now, at a much higher rate when it's above 2000 hertz. This is something called dirty electricity. We've now, you know, basically we just had very clean electricity sources, kettles, toasters, incandescent lights and stuff. Now we brought in electronics, and by bringing in those electronics, we've now got all these high frequencies on that line as well. So it's not just the 50 hertz frequencies. You've got thousands of other frequencies. And I read this every day, and basically they're high frequencies. So again, in physics, you'll find that the higher the rate of change, which is the frequency, the easier it will penetrate the skin. So now you've got all these frequencies on the wire, you stand in its vicinity and it will push currents internally in the body. And you can measure this within electricians, multimedia, a high standard.

Dr Ron Ehrlich: [00:14:12] Hmm. So coming back to just because you mentioned dirty electricity is over 2000 hertz. And we started off by talking about the Schumann's frequency resonance in the Earth that we've been... That we've evolved with, really that we have literally evolved with. Just to put a figure on it. I think the figure is something like 7.8, 7.87...

Kara Kieley: [00:14:37] And something like that...

Dr Ron Ehrlich: [00:14:38] 7.83. That's right.

Marco Simeoni: [00:14:40] That's the fundamental...

Dr Ron Ehrlich: [00:14:41] Yeah. So we've evolved with this natural Earth frequency as a result of lightning strikes occurring around the world every second, literally every second. It's kind of frightening to think about, isn't it? But anyway, it is what happens? 7.8 hertz. And here we are. The lights in our house were going at a 50 hertz. Yeah. And now dirty electricity. Through all this, electronics is taking us up to 2000 hertz. We haven't even talked about WiFi yet, have we?

Kara Kieley: [00:15:11] Yeah. Yeah. So essentially we think that, you know, where the issue started to come into our homes was when we did when we started to introduce the AC current, and with that came electrical lighting effects. And so that's where we think in history we can start to see some biological effects because we're using the AC alternating current instead of the DC, which we're more accustomed to with the Earth. So then as we progress, we just add, as we know, we add more and more than we get into when we're looking at microwave transmission and all that. Because we're using that electricity, we're using it to then create electromagnetic fields which are just higher in the spectrum. So we've just kind of use utilise more of the spectrum that we can so that we can actually have enough energy to transmit data through WiFi and everything through space. So that's where you we're increasing the energy and using that so that so as we progress in our technology and our understanding of physics and everything, how to use these things, we've just added more and more hazards to our home and our lives.

Kara Kieley: [00:16:15] We can use them and very we think we can use them in healthier ways, much better ways. But yet there's so many different frequencies. And as you can already get an understanding of, you know, as we've gone from 50 hertz in our home wiring in Australia up to like all the other frequencies that shouldn't be there, which are like a by-product of the use of electricity, which is dirty electricity, we can see that it becomes like a soup of different frequencies that we were never exposed to. So that's also where EMF, the topic gets a bit confusing because there's so many different frequencies and then each of those frequencies also, if we're going to measure them or for measuring them or doing anything to try to eliminate them or shield them, then they all have different solutions and different measurement tools and things like that. Yeah.

Dr Ron Ehrlich: [00:17:04] So, so what are some examples of dirty electricity? Is the microwave an example of that or what? What are some examples in the home of dirty electricity?

Marco Simeoni: [00:17:12] So how dirty electricity is produced is... So we have that 50 hertz, 240 volts, I'd say power that supplies all homes. Yeah. So if you take a laptop charger as an example, your laptop might run on 9 angles DC instead of 240 volts AC. So those little bricks that are on the charges that will convert from 240 AC to whatever 9 angles AC in this case Volt DC. So when it does that, it just sort of chops it up and when it does that, it creates these sort of transients and that energy sort of gets dispersed some of the building around the home so of that expanding, collapsing field around all the wiring. You've now got these thousands of radio frequencies that are riding on that you're exposed to... In the example of a solar system. You're taking the DC energy from the sun and convert that into a usable AC voltage for the house. So when you modulate it, you creating again, these transients and they age and the solar inverters are generally sort of switching at about between 15 and 40 kilohertz. So 15 to 40000 times a second. So that energy gets dispersed and all the wiring. We have this high rate of change and it just punch it straight through the skin.

Dr Ron Ehrlich: [00:18:31] Wow. I mean, just mentioned solar panels, which we're all excited about putting up and think we're doing the right thing, but they create a whole new story. The inverters that take the DC from the sun and make it available. Did I hear you just say that right? 15 to 40000 hertz.

Marco Simeoni: [00:18:52] Yeah. Generally, the frequencies you find from solar inverters like that.

Dr Ron Ehrlich: [00:18:55] Wow. Well, okay, so we're really setting ourselves up. It's just always strikes me that this is... this incredible experiment that we've all embarked on and embraced. Tell us a little bit about, you know, you come into a home and your spectral design, you know, and that's this is your business. You're coming into a home to assess how do you do that? What happens in a typical home visit? I'm just you know, I want to hear about what actually goes on.

Kara Kieley: [00:19:29] Yeah. So essentially when I guess starting from as well, when someone hires us because you know EMF testing can be... Yet not everyone is familiar with it. So it usually starts where somebody has an issue or they think they have an issue or they're concerned about where they're seeing the towers go up, like, you know, concerned about 5G towers or anything like that. And a lot more people are concerned about the dirty electricity from solar inverters. So we sometimes get those calls as well. So but essentially we're doing an exposure history with someone before we go in because we are basically looking at this is... It's an environmental health issue, right? And we come from the perspective is what we've had our own health issues in our own homes and we've had our own struggle with environmental health and seeing it as a maintaining cause. So, you know, if someone's taking all the right supplements, going to the right doctors, doing all the right health protocols, sometimes if your environment isn't healthy or if it is the EMF in your home causing the problem, then you're not really going to see those benefits like you can waste a lot of money. So essentially we come in usually when people have tried a lot of things and they realise that this might be the issue. So when we go in, we get that exposure history and we take a look at, you know, we take a look at how people use their houses normally because that's really important for us to see what their accumulated exposure is and what their exposure is overnight, what their exposure is during the day, how they're using their appliances, how they're... Are they do they have their heat on, they're cooling on overnight or when they're home, do they you know, during the day when the solar inverters on and the dirty electricity will be higher or are they sitting close next to a WiFi router like the whole day? And this is when the symptoms might have started? So a lot of it is basically... It's an but it's a problem.

Kara Kieley: [00:21:17] Each house is its own little EMF environment and we're going to solve the problem each time. So we're taking into consideration, like I said, like their exposure history, their symptoms, how they use that space. And then we're measuring in those places and trying to replicate what they do during the day to see what their actual total body exposure is. So all of the fields that we can measure so that we can really reduce that impact on them during the day and then especially at night when they're sleeping and they don't really need to be using this

technology and electricity. So we really want them to have the lowest EMF when we're trying to heal and detox and rest repair in our sleep. It's just, you know, if we're constantly stimulated by all these different frequencies, then that's really difficult to do. So yeah, so a lot of it can be depending on what we find, it can be habit change, it can and or specific solutions. But yeah...

Marco Simeoni: [00:22:12] Basically when we went so... Kara and I do a job together because I'm an electrician, I focus on the low-frequency stuff, which is everything connected to the grid and Kara focus on the high-frequency stuff. So high-frequency stuff is like your WiFi routers, your phones, your Bluetooth mouses, your Bluetooth and WiFi devices, cellular tower radiation, stuff like that, low-frequency I look at, say, the lighting situation of the home. We break that down. Then we look at the dirty electricity, you know, both on the active and neutral wires and then the Earthing system. I also look at the Earthing system. I think that's huge in this because I've never seen a clean Earthing system. It's always highly polluted, I found thousands of frequencies on there by one spectrum. Sorry.

Dr Ron Ehrlich: [00:23:05] No, I was just going to ask because that's something so basic, isn't it? The Earthing of electrical stuff. And I wondered if you could just give us Earthing 101 and what is ideal. So we know how compromised we are. What is it? What is the proof? You said you haven't seen many homes with a good Earthing system. But what should we be doing? What would be the best?

Marco Simeoni: [00:23:32] Well. It's kind of hard because the electrical grid, we utilise a multiple Earth-neutral system. So what people don't realise and people are always shocked when I explain this to them is the Earthing. So if you look at a power point, the bottom, you know, you got to looks like a little face, you got your two top ones in the bottom. That bottom is the Earth point. Now at every home, your Earth is connected to the return wire of the grid of the switchboard. So basically the Earth wire and the return wire of the grid are the same thing. So as power comes into your house on the active conductor, you can think of what the active is, the red. It's sort of like to keep it simple as positive, and then the black is the return wire, which is negative, just to keep it to simplicity.

Dr Ron Ehrlich: [00:24:20] Mm-hmm.

Marco Simeoni: [00:24:20] If you've also said the black wires...

Dr Ron Ehrlich: [00:24:23] They're the two ones.... They're the two ones are Marco. They're the two ones at the angle.

Marco Simeoni: [00:24:28] Yes, that's right. So power comes in and out.

Dr Ron Ehrlich: [00:24:30] Okay, now we talk. Yeah, it's just we're talking about the vertical part.

Marco Simeoni: [00:24:36] And that vertical part is the Earth right now. That is a parallel return path with the neutral wire of the grid. So in every house you're going to have, in some cases, a minuscule amount of current, which is on going out on that aspect of the transformer. And in some homes, depending on like resistance levels and stuff, you may have a significant amount of current which goes through the Earth back to the transformer instead of taking that return one. The other issue that you have as well is, is what we have with the electrical grid is it's this massive circuit and you have all these circuits within that circuit. So as you walk down your house, your... As that electric field comes out and sort of coupled with your body and you'd say if your before walking on concrete, you're constantly in this circuit and it changes as you move through the home. And if you touch, say, a sink and that's connected to it's got copper pipes that cop... those copper pipes are part of our Earthen system. So when you touch that, if you're barefoot, you will see current flow in the body.

Marco Simeoni: [00:25:40] So basically, you know, that's a big one for us. We don't want to see current in the body at all. So we look at the Earthing system because the other issue that comes with the Earthing system is the other thing will also radiate frequencies out into the world. People think that the Earth is zero voltage, it's clean, it's 100% of the voltage of the Earth in electrical installation will fluctuate throughout the day, depending on how much power you use and stuff. That's, you know, I've seen, you know, five, six, seven volts of voltage in comparison to the actual Earth on homes

Earthing systems. Was on a job on the weekend, they had nearly one amp of current flowing on their pipes, their gas, water and also the power the actual circuit, the kitchen circuit had nearly one amp of current, which is a significant. At home, might only pull four grams of current at a time, depending on the usage. So they had one amp of current on their Earthing system and that wasn't even theirs. Turn the power off and it's there, it's still there and they've got this massive magnetic field now. So like the Earthing systems are just always full of currents loaded with frequencies and you... And there's just so many variables and so many ways that can negatively impact you. It's different in every circumstance.

Dr Ron Ehrlich: [00:26:59] And how does one... How should one? Effectively Earth ideally... Earth a home?

Marco Simeoni: [00:27:07] Well, yes. So you... Sort of bounds for regulations like we have. You've got the electrical regulations. You have to have like what's called equity potential bonding. If you've got like copper pipes, you have to bond that to the Earthing system. You have to have an Earth electrode. These things you just can't get past. So, unfortunately, we're stuck with that. But, you know, if you yeah, you can clean it up, you know? Like, I often find something that is, I say nearly all the time. It's just Earth loops and circuits in a house. And then because you've created a loop, you've created a circuit, and you get current flow. And as you go current flow, you've got a magnetic field. So unless you've got like a spectrum analyser and you've got the solar scope and the right gear and you can actually measure these things, you won't even know what's there. Like you can have a cable running through the centre of the house that's connected to a pipe which has created a loop somewhere. And you going to have this field emanating off of the magnetic field and spark voltage as well. So yeah, unfortunately, we can't do much about it. It's just the way things are.

Dr Ron Ehrlich: [00:28:13] Okay, so the low-frequency is the grid and the lighting and the dirty electricity, and it sounds like, you know, the regulations may not be addressing some of the subtler issues around Earthing and how we deal with dirty electricity. Is it acknowledged as an issue like the... Is this accepted you know that people are aware of dirty electricity potentially causing problems?

Marco Simeoni: [00:28:42] In the industry?

Dr Ron Ehrlich: [00:28:43] Yeah. In the regulatory bodies and clear... It's not really... This sort of stuff's not finding its way into the regulatory bodies as much as perhaps it should. Is that a fair comment?

Kara Kieley: [00:28:54] Well, so there's a few aspects to that because it depends on what frequencies we're talking about and how high they're because dirty electricity is also labelled as like EMI electromagnetic interference. So this is a known thing in the electronics community where that actually has to be filtered and suppressed. If you're using like high-tech electronic equipment because it will interfere with electronics, right? So this is where we're looking at this at different levels than they are, because we're looking at it at the level of where it's interacting with our bodies and like potentially causing the impact for us. But here in Australia, the regulations are really the issue because when we're taking a look at a solar inverter for a house, we don't actually have the standards aren't really good enough to not have those frequencies that are going to impact our bodies, but they're good enough so that they're not going to impact the electronics or something in our house, Right? So but at the same time, other like if you're running a solar power, if you're running a solar farm, say they're going to do a lot to reduce that dirty electricity.

Kara Kieley: [00:29:58] They know about it and they know those harmonics are an issue because they are going to become more of an issue, especially on the distribution grid. They are aware of the issue because it will stop things from working properly. But also it's... Create... it's if you're running a solar farm, that's, you know, that's lost money, all that dirty electricity is lost energy. So if money's involved and you have to make a cleaner conversion, you're going to make a cleaner conversion. So essentially it goes back to kind of the regulations and the fact that, that's kind of where we're not actually protected, where we've had solar companies call us up and say, hey, well, how are you? Why are you measuring this dirty electricity and telling people that it's harmful? And, you know, we're not going around doing that and we're just measuring it and noticing the health effects. And, you know, some people, when they have noticed as soon as they got the inverter, just as an example, that's when their symptoms started. So you

know, correlation where the companies have asked us, well, you know, is there any reason we have to make it lower? You know, if it's within the exposure standards and, you know, there's no incentive for them to do that. So Australia is particularly bad. We think like Europe. Europe has better standards for them. How much energy of dirty electricity can be produced? So yeah, there it's I think it goes back to the regulations and just the fact that as long as it's not interfering too much with how the distribution system works or other electronics, that it's okay.

Dr Ron Ehrlich: [00:31:27] Hmm.

Marco Simeoni: [00:31:28] There seems to be... Sorry. There seems to be a consensus.

Dr Ron Ehrlich: [00:31:32] No, no, go.

Marco Simeoni: [00:31:33] Yeah. There seems to be a consensus which is shifting that this stuff just doesn't impact biology.

Kara Kieley: [00:31:38] Yeah.

Marco Simeoni: [00:31:38] So you have engineers which are working with electronics, and they just try and find the best way to make it work, But they're not factoring in biology at all. So they just don't look at it or think about it.

Dr Ron Ehrlich: [00:31:49] Yeah. Yeah. Well, yes. Which is precisely why we're having this conversation, because I think people do need to be aware that it's an issue. But going on now, let's move on. Just because I want to come to what are some of the effects that you've seen some of your clients report or you you've experienced yourselves. You've had this personal experience. High-frequency, though, is. Boy, I mean, talk about opening a can of worms. You get high-frequencies. How do we define high-frequency? I mean, 5G, obviously everything. Go on tell us what high-frequencies is.

Kara Kieley: [00:32:25] Yes. So generally we're talking about high-frequency. We're talking about radio frequency. It's a certain part of the spectrum. So

everything between three kilohertz to 300 gigahertz. Now, that's like that's a pretty broad range. And I know that there's a lot of concern about 5G, but we really just need to understand, I suppose, where these frequencies sit on the spectrum, because again, that comes back to well, how are we going to measure them and how they impact our bodies, right? So and then also we really need to know what frequency they are because that really affects the solutions as well. So if you do need to do any shielding, that's going to affect what's actually effective. So in terms of the impact on health, this is as well where we differ because obviously they're independent... There's independent bodies all over the world and that's where we use essentially we go back to using the building biology guidelines, but there's other independent bodies that when they analyse and critically analyse the research that's available, they find thousands and thousands of studies that show that the radio frequencies do impact our health adversely. Whereas, you know, if you've got industry that looks at the same, then it's about, you know, they find a different finding. So essentially we're going based of, as I mentioned, the research that we have available, the evidence that we have available in literature, and then we compare that to the health effects where the symptoms that the person is experiencing. And then that's when we use that exposure history to see what's going on. And often we can correlate it to radio frequency exposures.

Kara Kieley: [00:34:03] So I suppose some of the common symptoms that we see are when people have pressure on the head, headaches, tingling, they feel hot. And it's interesting because especially we get this so often, there's so many different variables in health, obviously. So we get the calls, but it's so consistent where it's like, well, I don't know if I'm crazy, but I've got these symptoms where I'm feeling this way, but I'm also stressed, or I also have kids or I'm also going through menopause or, you know, there's all these other factors, but generally we can kind of weed out those other variables and find something that correlates in terms of our measurements or when they got new technology, say the ambient or something like that. But what's really common I find with WiFi, so especially in the last probably two years when routers, WiFi routers and modems started to become a little bit more powerful. And you know how you have these mesh networks all over your home where they've got like the Google homes and, you know,

so basically it's... They're setting up devices all over your house that are transmitting and receiving data. And it's basically you're creating more of a microwave in your home because it's 2.4 gigahertz is what's really common to use. And that's also what we use in a microwave, you know, and then we have our 5 gigahertz bandwidth and then we also then have our 5G technology, which is at low band mid-band and high band frequencies.

So there's a few different frequencies that we use for that technology. So but going back to the symptoms of the routers and everything, we usually see that people get, yeah, that really the pressure on the head, the hot, almost like hot flushes or the other really common thing is feeling is people saying I feel like I've got early onset dementia and that is so common for with and when I hear that I generally know that someone's going to be sitting really close to really high source of radiofrequency for at least a couple of hours a day. And sometimes that's especially during lockdown this happens when people have moved their offices into their homes and they started just they had more radiofrequency sources around them. And we got actually a lot more calls and a lot busier during that time because of that, because then that's when people started to realise it might if they if their home was making them sick, that's when those correlations started happening. So, you know, and then you've got a difficulty concentrating, especially in Asia. Yeah. And in schools especially. One of the things that we noticed is that if you, if you've noticed the increase in ADHD, behavioural issues of kids, all that kind of thing, neurological issues, and so many of them are just sitting underneath WiFi access points. So that's just overstimulating arteries, just constantly. So, yeah.

Dr Ron Ehrlich: [00:37:04] It's amazing, isn't it, really, when you think about it, that us talking and listening to each other is an electrical experience biologically, you know, like you are making a sound and I am picking that sound up and my nerves transmit that sound in every cell in my body is an electrical experience. In fact, we talk about our energy production as an electron transport chain. That's what they call... What produces energy in our body. It's not called a carbohydrate transport chain is not called a protein or fat carb transport chain. It's called an electron transport chain. And yet, you know, we're told, look, be careful of the sun. It's 93 million

miles away, but don't worry about these devices we put to our heads and in our laps. It just seems like it's naive at best and kind of negligent at worst or cavalier. I don't know.

Kara Kieley: [00:38:04] Absolutely, Because that's that's the issue. It is disrupting our biological processes, which are electrical. And this is... It fascinates me how we've gotten to this point where we don't consider that and just use technology in a safer way because we do... And one of the things in research of how this causes oxidative stress, because I think a lot of this is because we're talking about non-ionising radiation, we're not ionising radiation. And I think that's where, you know because when you bring the sun in the movie, that's what we're talking about ionising again. So this is where I think the big difference is in people's thinking because it's low level and this is where the exposure standards don't really protect us because they... We can't actually have that data for the long-term low-frequency non-ionizing effects of these frequencies. But we do have we do know how they basically cause oxidative stress and ultimately DNA damage. They do disrupt our calcium voltage, gated... Calcium...

Marco Simeoni: [00:39:11] Calcium channel.

Kara Kieley: [00:39:12] Our calcium channels are basically just, you know, letting in an influx of the calcium into our cells that shouldn't be there because of how it changes the ionisation. So essentially, we've... There's so many different ways in which it indirectly affects our DNA and our biological processes, but people just don't give it enough emphasis because of the fact that it's not ionising and doesn't have enough energy straight away to knock those electrons off the cells and produce DNA breaks and that ultimately cancerous effects so...

Dr Ron Ehrlich: [00:39:50] Yeah. I mean, it's kind of sobering historically to reflect on the fact that, you know, I think in the 1940s, it was pretty well accepted that inhaling tar into your lungs wasn't good for your health.

Kara Kieley: [00:40:04] Absolutely

Dr Ron Ehrlich: [00:40:05] But the authorities took till about early 2000s to

actually acknowledge that... That's when it was admitted in the Congress, US Congress, about 2006, that smoking was addictive. So, you know these things... And that was smoking. My God, you know, here we are. We're all in on this, aren't we? I mean, we're talking through technology and high frequency and all of this. So we are... We're not about to become... We're not about to shut it all down. And what are some of the solutions? How do we live with them? How do we live with it in a healthy way? What would be some of the things that we should be doing and looking at?

Marco Simeoni: [00:40:46] So, yeah, look, our whole approach is look, as we just discussed, there are documented biological effects on the theories as well. Like you would expect that lighting would influence your circadian rhythm. You expect that having current flowing the body would have a negative effect. All of these things. So we just aim to obviously we evolved in nature. We aim to sort of just have... Have our homes as close to nature as possible. We brought in all these different kinds of fields and frequencies with different amplitudes and modulation, and it's just like you can, you know, as you mentioned before, the electron transport chain, look, the body is so unbelievably complex. And if you were to study these things, you could study this for 10,000 years and know nothing like the amount of compounding effects. So, you know, what we want to do is we want to just eliminate or lower or just reject return to nature as much as possible. So as an example, sort of in my room, what I've done is I've altered my lighting so that it's DC. So it's just like I've just got a small DC filled instead of this expanding, collapsing 240 volt filled with all these thousands of radio frequencies on it. So I'm not exposed to that electric alternating electric field. I'm not exposed to those dirty electricity frequencies right now.

Dr Ron Ehrlich: [00:42:15] Now, Marco, hang on. That's a big statement to change your lighting from alternating current to direct current. I mean, I'm not you know, I don't even pretend to understand all the physics behind that. But that's a fundamental change, isn't it? Because the electricity coming into our house is alternating current. How did you do that?

Marco Simeoni: [00:42:18] Oh, look...

Dr Ron Ehrlich: [00:42:18] You change it to direct current.

Marco Simeoni: [00:42:40] In this case, I just used rectifiers and they do produce a little bit of dirty electricity. But I set it up in a way where I filter it and I'm not impacted by that. Yeah, there's endless ways of doing it. Yeah, I just I did that and yes and now more exposed to...

Dr Ron Ehrlich: [00:42:55] And that's still that... That's still safe? Electrically safe? I'm sure it is. But...

Marco Simeoni: [00:43:00] Yes, I think it's safer.

Dr Ron Ehrlich: [00:43:02] Safer, safer.

Marco Simeoni: [00:43:04] Yeah, yeah, yeah.

Kara Kieley: [00:43:05] Yeah. So to go to some of the simple things that you can do to reduce your. Yeah, yeah, yeah. Is it just, you know, essentially distance is going to be your best friend. And really that's what we see when we're talking about people who've all of a sudden had really strong violent like or symptoms to something. Sometimes it can just be that they're sitting too close to a router during the day because when we're in the near field of devices as well, they're producing radio frequencies. The electric field and magnetic fields have yet to go through space, so in a smooth wave. So they're more biologically disruptive. So any distance that we can create and that's like from our phones, we want to be on speaker phone or have headphones preferably, air tube headphones that I'm not sure if you're aware of air tube headphones, but where they...

Dr Ron Ehrlich: [00:43:57] Can talk, I am. But to remind our listener.

Kara Kieley: [00:44:00] So essentially where you've got them, you don't have cords going into your ears as they are conductors, you just have hollow tubes so the sound waves can just pass through the hollow tube instead. So things like that are really going to, you know, in research that shows even ARPANSA, who are the Australian Radiation Protection Agency that basically sets the guidelines for telecommunications in Australia, they have even come out now with ways to reduce your exposure to things like mobile phones and WiFi, etc... So and one of the... The things they

recommend is yeah, distance and not talking with your phone next to your ear because that's when you're going to start absorbing a lot of the radiation. And in the research, when a lot of people have talked about brain tumours and things like that and the potential association there, but that's where you're going to start seeing more of those correlations is when somebody uses the phone on the same side of the head from like more than 30 minutes every day.

Kara Kieley: [00:45:01] And if you don't use it more than that, you're just increasing your risk exponentially. So really, we want to take a look at the timing, our cumulative effects during the day. So just reducing that and increasing the distance from these things. Also with our phones, we can turn off things like WiFi for not using them because all of our phones and all of our devices now that are transmitting radio frequencies, they're just meant to do it all the time. But they don't... We don't really need them to do it all the time. So if we're not using Bluetooth, we're not using WiFi, we can turn those antennas off and we can reduce our exposure. So a lot of it's habit change. You can reduce a lot by habit change. And, you know, sitting further away from your router, technically, we'd always want to go hard wired with Internet so that you basically aren't using the wireless technology. You're just using it through ethernet cables. So there are so many ways that we can use it in a safer way.

Dr Ron Ehrlich: [00:46:04] I mean, you know, the WiFi is just ubiquitous, really. I mean, everything... I know when I was doing my own home here and the guy was putting some speakers up in the ceiling, he said, oh, I'll just put in WiFi everywhere. You don't have any cables? No. Well, no, you won't. You're going to run the cables. And that was the blue cable with the, the, the little sockets and that is preferable that you would say obviously that is preferable or?

Kara Kieley: [00:46:34] So you can. Oh yeah. It's definitely preferable to reduce your WiFi in the home and like, you know, as in we who work, we can go back, we can, we can network all these things. That's what it's called, networking. We're using those Ethernet cables throughout the home. So, you know, everything is kind of it's interesting because a lot of people are

depending on who you get to wire and the kind of technicians you have. Some people don't even you know, they're very shocked when you even ask for that now. But it's definitely a good way to go. But then we can you can introduce low-frequency issues when you're using those cables, because then we are sending data then through that cable, right? So we also want to think, well, what's that close to? Is that close to wiring?.

Kara Kieley: [00:47:11] So when we take a look at lowering our exposure, say, at night, one of the easiest things we can do too is just reducing our electric fields around us, basically metal around us too, because any metal is going to induce those frequencies that we don't want. So we generally make the recommendation that this is like this can be expensive. So it depends on where someone's at in their journey or how unwell they are and how much they need to do it. But having no springs in your mattress, having a metal... No metal frame beds, no metal around your bed. Ultimately we would like to cut the power to the whole bedroom as well. But we do go in steps depending on the person's susceptibility to a lot of those things. You know, you can do yourself in your own home and see how you feel. But the lower frequencies can be introduced when you're using those, you know, anything that's wired then. Yeah.

Dr Ron Ehrlich: [00:48:14] I remember a friend had someone come in to do an EMF assessment of their home and found that the biggest source and they had a lot of WiFi in the house, but the biggest source was the adjustable bed motor under the bed that set them up to watch TV, which was right and within. And that was the biggest source of Y of radiation in the whole house where they were spending their entire night. On the other thing you mentioned distance or what sort of distance? I mean, you know, we're still living in our homes. What sort of distance is preferable? I mean, the further away, the better, obviously, I guess.

Kara Kieley: [00:48:53] Yeah. So essentially, yeah, the further away the better. But, you know, when it comes to like a router or things like that, basically you're going to be out of that. Each frequency will have its own near-field that you can calculate and this is where it gets a bit complicated, but essentially as long as you're like a half a metre to a metre away from that, then you're going to be out of that near field. But we would still want

more distance and that. So it's going to be as far as practical, right? And for example of a phone, I'll give you an example where we see people that don't want to one person has an issue with radio frequencies, the other one doesn't. That's quite common in a relationship as well, that we see one person sensitive one person isn't. And so when we need to look at how someone's using their phone and one partner won't turn it off at night, then that's where we need to look at what else we can do. So we often find that the other, the person who's sensitive, will cope quite well if we just get them to put it on the other side of the room. It can be like full volume on so they can receive the calls, but then we get them to turn their mobile data, WiFi and Bluetooth off so that they can receive calls and normal texts if they need to because it's just there for an emergency. But it's not solely transmitting and it's far enough away that it's not causing too much of a problem. So that's an example of where we can kind of look at distance to really reduce our exposure and symptoms if we have them.

Dr Ron Ehrlich: [00:50:18] What about these earbuds that we're seeing? I mean, I look at that. And I think that's let's I find... literally WiFi in your ear.

Kara Kieley: [00:50:28] So it's yes, it's Bluetooth. A lot of people are under the misconception that Bluetooth is better, but really it's meant to travel less distance, so it's less energy. So technically, I suppose you're going to absorb less and it's not going to have such an immediate impact potentially, but you're putting them in your ear. Now, the thing with these devices and radio frequencies is that they're measured over a six-minute to 30-minute period, really close to your body. So... And not even in your ear, but it could be you can read the technical information for all of this in your phone or these devices where you can see how far away they were actually measured to determine if they were safe. And usually it's about 5 to 10 millimetres away from your ear. So it's not even on your ear where most people use them or in your ear. So and that is for a short period of time, and that's how much radiation that you actually absorb, right? So there is no way for us to actually accurately measure our cumulative exposure and how that's affecting us throughout the day. I've got friends that sleep with them in their ears, you know, like little kids are wearing them. Their blood-brain barriers are thinner, and we know that this can impact that WiFi you know, according to the research, that can decrease the blood-brain barrier and let more

toxins in. And that's worse when you've got, you know, thinner skulls, developing brains. So we really are doing this without really thinking about the long-term consequences. And there is not the research there to protect us from those, because that's not how these things are studied or deemed to be made safe.

Dr Ron Ehrlich: [00:52:09] Mm-hmm. Wow, I mean, you've raised so many issues here today that we literally are bathing ourselves in. If we're just finishing up and going to give our listener a couple... I mean, obviously, to know that there are building biologists that can come in and assess this is a subject we've covered a few times. And I think it's worth reminding our listener about the fact that this is available and potentially an issue. But if someone was listening to this and "Yeah, I think I should be just I should be taking some care here." What are we what would be a couple of tips that would you give people very high level that would get them, you know, heading in the right direction?

Kara Kieley: [00:52:52] Yeah, absolutely. So, I mean, yes, it does sound a bit doom and gloom, but this is... There is absolutely so much you can do with behaviour and just starting to realise what the sources are that you know, and then you can start to minimise because you know, we live in this world like I was sensitive to EMF after a mould exposure and I've definitely come back from that and I can use technology in a safer way and a lot of people can, right? So I think it's really important to know what we have control over in our homes and really minimising our exposure at night is going to be a really great place to start just starting, even by turning off your WiFi router, you know, and just knowing that some of them will still transmit even if you turn the WiFi off. So actually having that off at night is just a really good place to start. And you can have impacts from external sources. But just starting with what you do have control over in your home is going to make a huge impact. Sometimes we see people's symptoms just alleviate just from habit change and so that's really important for people to know. And you know, the way that you use your phone, as we've mentioned, makes a huge impact.

Kara Kieley: [00:54:03] Turning off your WiFi at night, just changing the way that you use your lighting as well can have a huge impact if sleep is an issue

for people. So it doesn't mean you have to go and change your whole home. You know, all the lighting in your home, you can just put on lamps that have a better spectrum of light at night. You can just turn off that really bright task lighting and make sure that at least one hour, preferably 2 hours before bed, you're using the like there's no blue lights or the the dimmer amber lights, things like that. So salt lamps, things like that, salt lamps generally have a good spectrum. We see a lot of people who already have those. So then we would just say, we'll just use those, you know, while you're winding down to go to bed. So anything we can do to help our bodies? Yeah, not to press that melatonin and make it so that we can rest or repair at night is good. And just being aware of the sources that are in our home and especially in our bedrooms and knowing, you know, if you're sleeping on the same side of the wall with the smart metre or switchboard, because in Australia a lot of the homes they'll have the switchboard or the metre box with the smart metre in it on a main bedroom, it's really important to just create distance away from that. So obviously just if you can take a look at the, you know, the... Your home and the design and how it's laid out, you can just move your bed even just from one side of the room to the other, which would help. It's not going to eliminate it. But all these things will help and reduce your total cumulative exposure.

Marco Simeoni: [00:55:44] I'll just add to that. Like it, a lot of the things Kara mentioned, the just the simple things that can be done, you know, they generally don't backfire, but sometimes, for an example, hardwiring your device or your laptop or something, you can introduce like a significant electric field. So basically with the like, you know, basically turning to WiFi, often your phone turning a Bluetooth off changing a wireless Bluetooth mouse or a wireless mouse and all these things that they're simple and they don't really have many kickback effects. But a lot of the time you do get kickback effects, like if you put up some shielding the block, the cell towers, radiation, for example, you can see an increase from reflection basically coming back. And if you put like a plug-in dirty electricity filter in the wall, for an example, you can reduce one of the fields, but you introduce another. So there's it's actually pretty complicated. So every time you do make changes, you should be testing to make sure that it's not planned and you haven't created kickback effects.

Dr Ron Ehrlich: [00:56:47] And there are a lot of devices and a lot of claims

because, you know, it's obviously known that this is potentially a problem. But here, you know, buy this and it'll protect you from EMF radiation. And we want to believe, should we? Should we believe?

Kara Kieley: [00:57:04] So I think look, optimistically, I think we're going to get there in terms of making products that are going to help us more because especially with there's the demand for it, people are aware of it. And I think that, you know, the health effects are going to start to become more known. But with that, look, we've honestly seen where people were just concerned about sometimes it's a waste of money because it's, you know, you can spend thousands. We've been to places where they've spent thousands on these devices, but we go in and we can just change the setting or turn off the router. And that was their main problem, right where it's like. So I think that there is a place for them and they all think they all work a little bit differently. So you do have to look at the technology it's based on. But you know, it is very hard to replicate the studies and the independent research, as they say, that they have to back them up. And if we can't, we're sitting in a space where if we can't measure the difference with our metre, then we don't really recommend it.

Kara Kieley: [00:57:58] But we don't we don't say that they don't work. I do think they work for certain people and I do think that there's a comfort there as well and you're producing kind of more energy that helps our body cope with these manmade fields, right? But our space is what we want to reduce those manmade fields first, because what's the point in spending the money and using these devices to help our bodies harmonise if we don't eliminate the problem to begin with or reduce the problem? So it's more that we... It's more like a holistic approach, right? They need to be used in conjunction with and like Marco said, with the plug in filters and with it's the same with devices. It can be a false sense of security. So I really think that if people really want to get more control over the environment, getting your own metres, getting consumer metres and starting to measure and to understand and to so you can see how your exposure is actually reduced, then that can give people a lot of peace of mind to just feel like they've got control over where you go. I think that's a lot of it. Yeah.

Dr Ron Ehrlich: [00:59:02] Hmm. Well, Marco, Kara, thank you so much for

joining us today. That's it's been really a topic we all need to be engaged with. So thank you so much.

Kara Kieley: [00:59:12] No worries. Thanks for having us.

Dr Ron Ehrlich: [00:59:14] Well, it's a big topic. It's seemingly overwhelming, but with knowledge comes power. And if you are waiting for the authorities to regulate this, I think we are going to be waiting a very long time. There is just simply too much involved, too much money and lives involved. And it is such an integral part of every single one of our lives. There's no question about that. And we're not going to switch off technology. I mean, we're just not going to get rid of technology. So we have to learn about the potential problems and how to mitigate them. And often distance is our best friend here and turning stuff off, particularly when we go to sleep at night. Look, this links back to a holistic approach to health care. Sleep is the... Undoubtedly the most important part of the day, and as we're discovering, quantum biology underpins so much. In fact, everything of what we do on a cellular level and on a cellular level.

Dr Ron Ehrlich: [01:00:19] It's so interesting to note that the thing that produces energy in our body, the mitochondria, go through what is called the electron transport chain. So when we eat nutrients, be they carbohydrates, fats or proteins, they get broken down along with water and they drive the electron transport chain to produce energy called ATP adenosine triphosphate. Interestingly, adenosine, that molecule is what pushes us into sleep pressure. It's the chemical that builds up in our body and causes sleep pressure. But I digress. Mitochondria is where the electron transport chain occurs, not the carbohydrate transport chain, not the fat transport chain, not the protein transport chain. We are literally talking on an anatomical level about the movement of electrons. So as I said at the beginning of this program, and enduring to assume this has no biological effect, being positive or negative is naive at best and negligent at worst. And the authorities are just not going to tell us that. Witness the fact that Mercury is a classic example of how regulatory bodies work. Now, Mercury is half of what amalgam fillings are, the silver fillings in your mouth, the mercury. Now, when a dentist does an amalgam filling, it is illegal for him or her to put the little bit of leftover that he hasn't used on the patient

in the garbage or toilet or down the sink. The EPA, the Environmental Protection Association, the NHMRC, all the regulatory bodies make it very, very clear that we do not want to pollute the environment. But guess where the regulatory bodies feel the only safe place to store this material is in a human being. So I offer that to you as an example of the health intelligence of regulatory bodies. We talk a lot. I talk a lot about IQ, EQ and HQ. IQ we all know about EQ is emotional quotient very important, but HQ is your health quotient. That is a function of both your health and your knowledge of the issues which affect that health. And I would argue that regulatory bodies, knowledge of those issues is based on how they approach mercury, one of the most toxic elements in the world. How they approach that is a good example of how they approach environmental toxins. So you've got to take control of this yourself. And it's good to know that by making informed decisions, you can reduce your environmental stress by 80 or 90%. Look, we'll have links to spectral design. I think there's a lot of great resources on there and have a listen to the episodes we have done with Nicole Bijlsma and Lyn McLean very early on about EMF Radiation and David Carpenter, one of the world leading researchers on it and many others. So I hope this finds you well until next time this is Dr. Ehrlich, be well.

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