SEXUAL ENERGY SERIES-6: New Fabric Tech Blocks EMFs from Your Body – Lambs – #792

Announcer:

Bulletproof Radio, a state of high performance.

Dave Asprey:

You're listening to Bulletproof Radio with Dave Asprey. This interview is part of our sexual health and wellness series, scheduled surprisingly, right around the day of romance and we're going to be talking about electromagnetic fields and radiation exposure. And you can be saying, "Dave, why would you talk about that during sexual health and wellness?" And the reason for that goes back to the very first book I ever wrote, called The Better Baby Book, where I reviewed good literature, it was published in 2011, so 10 years ago, and the five years prior to that was writing the book.

I reviewed a lot of literature that looked at reproductive wellness and EMFs and it became very clear that you don't want to have EMFs near your ovaries or your testes if you want to have healthy kids, and as a result of that, I stopped carrying my cell phone in my front pocket where I'd carried it forever, and I moved it down to my, basically hip pocket or a mid-thigh pocket, in cargo pants. Then I ran a whole body DEXA scan that looked at bone density and we found that, that part of my right leg near the femur where my phone sits was 10% less dense than my left leg, which is my non-dominant leg. So we know that there's a mitochondrial EMF interaction that's not positive. There's been several interviews about that, but this one we're going to go specifically into what's going on with reproduction and wellness.

And our guest today is Arthur Menard, who is the founder and CEO of Lambs, which is a company that makes clothing that blocks EMF. Especially around reproductive organs. I'm actually wearing a Lambs T-shirt right now that has special fibers built in on it. So when we talk about bio-hacking, we talk about do less of what is harmful, EMFs are incredibly useful, but they also can cause problems, so how do we reduce the problems so we take less of a hit and I think that there's great evidence behind this. We're going to do into the evidence and see how that appears around, specifically, our sexual organs. Arthur, welcome to the show.

Arthur Menard de Calenge:

Dave, thanks for having me. Super excited to be here.

Dave:

Well, I'm excited you're here too, because I mentioned that experiment where it wasn't meant to be an experiment, I just didn't want cell phones radiating my junk. So what I did is went out and I tried to find an EMF-blocking fabric that I could sew into my pants, because I couldn't buy anything. Now, one of the things that is a hallmark for me is I start companies that make things I can't buy. That's why there's 40 Years of Zen, that's why there's TrueDark, they're not blue blockers, they're partial blue blockers and then more blue blockers at night. Because you can't buy those, but they work. And even Bulletproof, you couldn't buy MCT and collagen and all that stuff.

So you saved me from having to start a company that did this, because the world needed, we needed EMF-blocking, especially undergarments. Whether we're trying to reproduce or not, your testes makes testosterone. It just seemed really important, so thank you for doing the work to do this, because it wasn't that easy and the stuff that I did was probably not that efficacious and certainly it was a crappy job, so you actually have T-shirts that work better than normal T-shirts, because here's the EMF-blocking, but they don't get BO because silver is anti-microbial.

So thank you, thank you, thank you.

Arthur:

Well, I mean, we essentially started the company coming from the same place as you did. Without your experiment, but effectually looking at what was available when trying to protect ourselves from EMFs and figuring out that there is nothing that really works and that we wanted to wear, so we started Lambs to scratch this itch that we had, and it turned into something much, much bigger than we expected.

Dave:

The other reason I wanted you on the show was you have a master's degree in biology and a master's degree in engineering, and it takes a certain level of knowledge to do something. Not, "Oh, let's just wrap tinfoil on something," which is not at all the vibe here. You can tell, when you like, "Oh, this is actually a pair of underwear that I would want to wear versus some weird thing." I will admit, for 20 years, every now and then, I would try to buy something from Germany that was woefully expensive and I'm like, "How could anyone wear this? It's not viable."

I'm wearing a T-shirt right now, if you're watching the video on YouTube, it's just a normal looking T-shirt, but you flip it inside out, the inside is this silver color and it's got your technology embedded in it and it means that EMFs don't get absorbed into my organs and it's just smart. So yay, something that works, which is cool.

Arthur:

It's a better way than wrapping you in tinfoil for sure. That said, to be honest, the very, very first idea for a prototype was like, "All right, well, we could put tinfoil. It wouldn't be great, but we know that physically we can try something like this." And I mean, there is a whole story and we can get into it.

Dave:

I did see one of your early prototypes that you guys sent me and I'm like, "No thanks." But where it is now, it just looks like clothes. And it's one of those things where, okay, eat a meal, it looks like a normal meal, but, "Oh, it was made with the right fat, so I felt different afterwards." And the idea is how do you have more energy at the end of the day? So you actually got mentioned in the Forbes 30 under 30 for starting Lambs, which is super cool. Did you think it would get to that level of success with an idea that frankly, it's a little bit out there? Did you think it would catch on the way it did?

Arthur:

No. I mean, the reason why we started Lambs, as I said, was scratching our own itch at the beginning and frankly, we built the products for ourselves and very quickly we had people around us saying, "Well, that's awesome. If you manage to do it, I want some too." And we had one friend, then two friends, then 20 friends, then 40 friends asking for this, and that's when we realized, "Well, actually, looks like the world needs that." And that's when we started actually working on Lambs not just as a product for ourselves, but as a product for the world and for people.

And then when you start digging into how EMF damages your cells, how EMF can cause long-term diseases, that's where you realize, well, actually we're working on something that's pretty freaking important here. So it was awesome being recognized as Forbes 30 under 30 for effectively working on Lambs and trying to change what we're wearing every day so that we have a better living today and

better health tomorrow, because it meant that at least Forbes is recognizing that we're working on something very, very important for the world and that's what drives us to get up every morning and make better technology, better clothes and just better products overall for our customers.

Dave:

Your story reminds me a lot of the very early days of Bulletproof. Like, "I really want to make these mold-free coffee beans that won't cause me to get tired or cranky when I drink this coffee." And the market size for clean coffee was zero. It didn't really exist, and I'm like, "Maybe I can get 50 or 100 people interested and we'll just share the cost of lab testing and all this stuff." And it turns out it was more than just a few people who wanted it and it just kind of grew and grew because well, it worked and because there was demand. But when you start a business where the market size is zero, it's really hard. You're not going to get investors early on. It's one of those things, "Well, no one's done the before because there's no reason to do it."

But there was a reason to do it and you've shown that there is a market for it. But let's talk about the reason for doing it. Define the types of EMFs that we're dealing with and then I want you to share that with people and then I want to share the biological harm. But first, let's just talk about what are the flavors of EMFs we should pay attention to?

Arthur:

Yeah, so probably we can start by defining EMFs for people, for listeners who might not know what it is. EMF stands for electromagnetic field, which also is called, in the world of regular people might be referred to as radiation. So radiation is energy that comes from a source and travels at the speed of light with wave-life properties and [inaudible 00:09:12] in the magnetic field. So now that I've said this and geeked out on engineering stuff that doesn't ring a bell for anybody, so let me give you some concrete example of what EMFs can be.

So EMFs vary based on the frequency that they have, which is the number of waves that will pass through a fixed point per second. And if you go to the lower frequencies, you'll find radio and TV waves and then you'll progress into the microwaves, which are what your microwave works on, but also your cell phone, your Wi-Fi, your Bluetooth. Then you get into visible light, so the sunlight right now is technically EMF. Then UV, finally X-rays and then gamma rays and radioactive elements.

So everything that is above visible lights has very, very high energy. It's called ionizing radiation and because the energy is so strong, it can knock out electrons from your DNA and from the water [inaudible 00:10:19] your DNA in your nucleus, which when you knock out an electron, it creates something called a free radical, which we can get into later, and which damages your DNA. So that's why Chernobyl or all the other radioactive elements are dangerous for your health, because they actively damage your DNA. The EMFs that we're talking about here with Dave are specifically microwaves and the reason why we're concerned about microwaves today is because you have two types of EMF.

You have what's called the natural EMFs, so like the sunlight for instance, the Earth is naturally emitting very, very low frequency EMFs as well. And then you have the manmade EMFs which are pulsed radiation, and that is not found in nature and so what studies have shown is that the body reacts to manmade EMFs whereas it's used to, it's adapted to the natural EMFs that are present. So what does this reaction mean? And this is where it gets interesting and this is where Lambs got started, the reason why Lambs got started is because today there is over 30,000 studies showing that EMF and especially microwaves can have an adverse effect on your health.

Dave:

30,000 studies?

Arthur:

Yeah, 30,000. So we can get into the whole, "Why don't people hear about this?" But the science is there and the science has been there for a long time now.

Dave:

I agree that the science is there. I'm also from Silicon Valley where, heck, we invent half these EMFs, right? So most of my engineering friends are saying, "Dave, these are heating the tissues enough to cause any harm." And you can use a microwave to cook yourself, which clearly is deadly. But the core assumption behind what they're saying is the only way these cause harm is by heating and those 30,000 studies, how many of those approximately are just saying, "Oh look, heating tissues with microwaves is bad," and how many of them are actually looking at other effects?

Arthur:

I mean, close to none of them are looking at heating and the reason for this is that's not what's concerning about EMFs.

Dave:

Exactly.

Arthur:

And actually, today, the safety standards that have been set by the FCC is in the 90s, by the way, which is already something that is interesting, meaning in the '90s where you had the cell phone where if you were considered a heavy user, that's when you were using your cell phone two hours a month. And so the safety standards were set based on how much it heats your tissues, not based on oxidative stress, which is the real mechanism and we can get into it of how EMFs are impacting your body. And if you want to know why you haven't heard about oxidative stress with EMF and rather heating, let me just give you one number which I think is going to say it all is the telecommunication lobby, the wireless lobby is spending about 100 million a year in lobbying.

They're very, very active and a lot of scientists and journalists have compared what's been happening with EMFs, with the tobacco back in the days where it took 30 years between the moment the science was conclusive that tobacco causes cancer and the moment where the public started hearing about it and tobacco companies starting saying, "All right, that's true, and also we kind of swept it under the rug." But anyways, so the mechanism of harm is-

Dave:

Well, hold on a second. We got to go a little deeper on that.

You could look at the big telecommunications, or at least the wireless equipment manufacturers as the next Monsanto, as the next big tobacco, right? Where there's growing evidence of harm, but they either look the other way or maybe they're suppressing it, it's hard to say. I had the opportunity, maybe four or five years ago, to ask the CTOs of three of the largest computer and wireless companies on Earth, they were all on stage together at a Peter Diamandis' event Abundance and I said, "Guys," this was in the context of VR. I said, "You're mounting headsets on people's heads that have a Wi-Fi antenna and

are shining bright blue light into people's eyes. Whose job is it to validate that this isn't doing bad things to our brains?"

And they all genuinely looked at each other and they're like, "It's not our job. Like, we go with the safety standards. We meet all applicable standards. So we've done our job." And it wasn't like a malevolence or evil, this are smart, curious guys who want to perform well, but they've also all been taught only heating matters, we're not heating enough, therefore, problem solved. And yet, someone out there has done all of these studies, but it feels like the industry's rejecting the studies because they can't be real. Even though they are real, because you have these core assumptions. It's splitting reality for them. And I agree with you, it is like big tobacco, but are you hopeful they're going to fix the problem or are we all going to be encased in Lambs head to toe, whole body EMF condoms forever?

Arthur:

Well, I'll reply with a different question, which is, do you see yourself going back to not having a cell phone and to not having-

Dave:

I don't want to go back.

Arthur:

Yeah, no one wants to go back and I think at the end of the day, the problem that we're having is not just the exposure, because I mean, the exposure is there. Alcohol is bad and everyone knows this and a ton of people still drink alcohol. But it's the fact that not a lot of people know what the issue and that there is an issue and that they should be mindful about how much exposure they have. And then is our EMFs going to disappear tomorrow? I doubt that. It's rather the opposite. 5G is coming, which is going to be a massive increase in exposure and the reason for this, again, is because EMFs have a very, very good side of enabling us to do this interview right now, to enabling the Internet of Things, all the Smart devices. I'm wearing my Oura Ring right now.

And without EMFs, that wouldn't happen. So I don't think it's going anywhere. I think, however, that people are going to learn more and more about the adverse effects of EMFs over time and unfortunately, a lot are going to regret not taking action sooner to shield themselves from EMFs just like with tobacco, a lot of people would have acted differently if they had known how bad it was, when the studies were already there. So I'm not blaming the wireless companies for doing what they do. I think actually they do an amazing job at creating amazing technologies.

Dave:

Heck yeah.

Arthur:

However, I think there should be a broader discussion with the public about, "Hey, there is 30,000 studies showing adverse effects," and very, very clear adverse effects that we can get into as to what the mechanisms of harm are and whatnot. I think people deserve, at least, to know and the lobbies are rather going the opposite way, which is... If you look at the industry, they've been funding a lot of studies that don't show an impact, and then if you look at independently funded studies, they all show an impact. And then what you hear in the media is the science is divided, but the science is actually not

divided when you look at independent studies, which don't necessarily have a reason to have a result or another, in order to get more funding.

So again, not putting the blame on them, but I think people deserve to know that this can impact their health long term and in a pretty significant way. A lot of scientists out there are saying this is bigger than tobacco when it comes to impact.

Dave:

It's bigger than tobacco and it also goes deeper. For years people have been studying why is Silicon Valley such a place of innovation? And they say, "Oh, there's lots of universities," and there's all these reasons. But a book called The Secret History of Silicon Valley really opens up... It's one of the most fascinating books I've read about this kind of thing. The reason Silicon Valley is what it is today is because in World War II, the Germans had radar and the Allies didn't, and they were kicking our asses. So the government, under secrecy, put billions of 1945 dollars into creating radar equipment in Silicon Valley in secrecy.

And all of the people who did that work went on, in fact it was done largely through a professor at Standard, and a lot of them went on to create Fairchild Semiconductor and so wireless, it was actually at the heart of national defense and that's what started what is now Silicon Valley was billions of dollars and, "We are going to lose a world war is we don't do this right." And so that knowledge came out. Something that stands out to me, in the context of just helping listeners understand this is real, somewhere around 2005, I sat down in Mountain View, California with the guy who holds the first patent on 80211 Wireless, the first wireless that we all used. And he was a grizzled engineer, we call them Gray Beards in Silicon Valley, the guys who've been around, they really know how it works.

And he was talking to me because I was working on the first stick-on heart rate monitor, and he said, "Dave, I just want to meet, I want to talk because I see what you're doing." And he turns his laptop around and he goes, "I took the million dollar that we use to measure the fields for wireless, and I turned it around on my body and look at all this data." And he showed me a picture of his body with the strength of the EMFs coming off of his body and he's all excited. He goes, "I think there's got to be diagnostic info in here. But there's real data coming off the body and there's interactions and we don't know anything about it." Like the curiosity of a true inventor there.

And I know that's real, and it's how the body works. We're electrical, we're magnetic, we're chemical, we're light-based, we're all those things. And so pretending that that's not true seems harmful and I'm hopeful that the work you're doing at Lambs and the work that those 30,000 research papers are doing, it's not going to end wireless. It won't, because wireless is too useful. What it is going to do, though, it's going to... Once we acknowledge it's an issue, we can make wireless that's compatible with human biology and that is a trillion dollar rewiring of the planet that will happen to the first company who does it.

The problem is that all of the companies now, if they admit it's a problem at all, then they're opening themselves up to crazy liability. So there will be a new disruptive upstart that says, "Hey look, you can have a wireless signal house that's actually good for you and carries data." And once that happens, it's going to be a very interesting world and this is how disruption happens, so I'm hopeful that by saying, "Hey guys, you should protect yourself from something that isn't going to kill you right away, it's just not good for you." It's like kale. Kale won't kill you right now, but it's not good for you. But people are like, "Oh, I'll just eat it with abandon."

So I think the awareness part of what you're doing is awesome, and you've talked about the types of EMFs, and we're not talking about eating uranium, we're talking about microwaves, basically. Now the studies that I looked at, looked at sperm, and sperm require huge amount of mitochondrial

energy, that's how they can swim. So they're an early indicator of your overall system's health, whether it's reactive oxygen species, free radicals, or just a poor ability to make and store energy. So you can look at the strength of your swimmers and it's going to be a proxy for EMF exposure or toxin exposure, because they both cause the same oxidative stress. What does EMF for women? What are the risks?

Arthur:

It's actually very similar to men. So for women, I mean, I think first we should backpedal a little bit and look at what the risks associated with EMFs are, because we just talked about fertility. Infertility is one of them, but the risks go broader. There is risks of cancer, there are risks of leaky guts, cardiovascular risks and neurological disorders or neurodegenerative diseases. And so for women, the risk is very much the same as men and the studies have looked at the impact on ovocytes as well as the impact on hormones. And what we're seeing is, yes, lower fertility for women and lower quality ovocytes, or just destroyed ovocytes from exposure to EMFs.

And I think what could be interesting is to look at okay, but why are EMFs causing these issues? Because if I say it this way, "Yeah, cardiovascular disease and also cancer and also fertility issues." Kind of sounds like, "Well, that's the whole issues of the world are linked to EMF." That's not exactly why. But the reason for this is because EMFs are a source of oxidative stress, a very strong source of oxidative stress in your body. Not eating well is another source of oxidative stress. But EMFs is a constant one that you can't really do much about.

Dave:

So talk to me about what happens inside the cell and it's that that's driving infertility because infertility's one of the first things that goes biologically when your body goes haywire. So yeah, walk me through the cellular effects of this microwave radiation from devices.

Arthur:

Yeah, I think that's going to really help frame the conversation afterwards. So it all starts with calcium. Calcium makes up about 2% of your body mass today, so it's huge and a lot of people have heard about calcium as making your bone and teeth, and that's true. But also calcium is a very, very important messenger signaling molecule in your body, and what's important to know is that the vast majority of calcium is outside of your cells. So the concentration of calcium is 20,000 to 100,000 times higher outside of your cells than inside and it's the movement of calcium between your cells that makes up this signaling effect.

The way calcium moves from outside of your cell to inside of your cell is through something called voltage gated calcium channels, which are little channels in your cell's membranes that activate or deactivate the transfer of calcium ions. What research has shown is that when you're exposed to EMF, that activates those voltage gated, emphasis on the voltage, and again EMF is an electromagnetic field, so it makes sense that they would get activated by this and you have a huge influx of calcium ions into your cells when exposed to EMFs. About a million calcium ions per second rushes into your cells.

And what happens then is that this extra calcium ions cause an increase in what's called nitric oxide and super oxides. Both of these are free radicals that are not super helpful in themselves, but that combine into a molecule called peroxynitrite and peroxynitrite today is one of the most harmful toxins that we know of for the human body and this molecule effectively starts attacking important biological molecules such as your cell membranes, your proteins, your mitochondria, and most importantly your DNA.

The reason why it's so harmful is because it has a very long lifespan and can travel through membranes, so it will get into your nucleus, it can move from cell to cell and it will turn into something called carbonate free radicals which, as we said earlier in this interview, are little molecules which are missing an electron and that are very, very potent in stealing electrons. And by doing so, they damage the molecules next to them, which then become free radicals themselves, because they're missing the electron that just got stolen, which is a chain reaction then.

To go back to the explanation, peroxynitrite is going to start attacking all those parts of your cells, including your DNA and your mitochondrial DNA as well, and then we have a natural [inaudible 00:29:16] towards repairing DNA in our bodies which use up a lot of NDA+, which is one of the enzymes that are used to create energy-

Dave:

NAD+.

Arthur:

NAD+, yeah.

Dave:

Yeah, not NDA+.

Arthur:

Hey, this is the business side of me.

Dave:

Exactly, I was laughing because I signed an NDA this morning, no-disclosure agreement, but yeah.

Arthur:

Too many letters.

Dave:

The life of CEO.

Arthur:

There you go. There's the business hat and then there is the biology hat. So by trying to repair those DNA damage, what happens is we're depleting our reserves for this enzyme that is used to create ATP, which is the energy of our cells in our body. And DNA damage plus lower ATP or impossibility to create ATP means that our cells become senescent faster, meaning they die faster. And this overall scheme that is happening in the cells is not only compounding, as we said, free radicals create free radicals, and that's the concept of oxidative stress, but also it can really damage tissues.

And the cells that are most impacted are the cells which have a higher concentration of voltage gated calcium channels, and the tissues that have those cells with the highest concentration are your heart, your brain and your testicles and there you have it.

Dave:

Ah, you missed one.

Arthur:

Did I miss one? Your gut?

Dave:

Well, testicles are relatively high. They're on par with the brain and heart. So my big Headstrong book was about mitochondrial biology and how to make more energy and so I went really deep on this and there's something that's really cool for the theme of the podcast and sexual wellness kind of series. Well, the neurons in the brains, 15,000 mitochondria per cell. The muscle cells in the heart, 15,000 mitochondria. Most of the rest of the body is a few hundred to a few thousand and in men in the testes, you get about 15,000. But in women, in the ovaries it's 100,000 mitochondria per cell.

And that's important because the mitochondria, they don't just make energy the way we talked about. They're also the first line sensors of the environment around us. So women have a very special ability in their ovaries because they're better able to sense the world around you. I believe it's so they can actually select the right egg for the world you live in to thrive the best, because you have a billion eggs, what decides which one gets picked? Right? Something decides and it's got to be those mitochondria. But okay, so women are probably more susceptible than men, except they're on the inside, so they're somewhat protected by tissues, whereas on guys, they're just kind of swinging in the wind, so maybe they're less protected, but they also have less mitochondria to take the hits.

Arthur:

Another key difference is that men create sperm on the, effectually, daily basis, so it takes three months to complete the cycle of sperm exogenous. And whereas women have all their ovocytes from birth and they don't create any additional eggs, so ovocytes are what turns into an egg when ovulation starts. So impact by EMFs on those ovocytes is something that you can't repair. Whereas with men, if you change your exposure, you can potentially go back to normal levels, and we've seen this actually with people who started working with Lambs and we did an interesting experiment where we had them measure their sperm count as well as sperm quality, motility, lifespan and correct morphology.

We measured all of this with our early employees and interestingly, the sperm count doubled three months after they started wearing Lambs. So you can go back to those levels. With women, it's like every damage that is done is there to stay. So that's one more reason for women to be mindful of this and to try and limit their exposure as much as possible.

Dave:

When you talk about limiting exposure, there's stuff the I'm guessing you recommend, certainly stuff I've talked about for the entire 10 years of blogging about this. Turn off your Wi-Fi at night, put your phone in airplane mode, don't put it right next to your reproductive organs or your liver or any of your other organs. Don't carry it in your chest pocket, don't stick it your bra. Keep it away from the juicy bits would be really good advice. So those are easy things to do. Are there other protective things? Other than wearing Lambs, obviously, where you do this that people can do or is that pretty much it?

Arthur:

Corded headsets is another one. Try and take your calls either with a corded headset or there you go. Or put it on speaker mode is another option. For Wi-Fi at night, a really cool trick is just to either program

your box to shut off itself between the hours where you're sleeping, or to get a programming plug if your modem doesn't allow you to program this in or if you're not super tech savvy. A programming plug costs like $20 and then it will turn off your Wi-Fi at night, every night, for you without doing anything. And just get into the habit of just take out your cell phone from your pocket and put it on the table when you get to the office or when you get home. Don't carry it on you all the time.

And I think with this and obviously wearing Lambs, you're pretty much covered. The overall idea is you're not going to be able to remove sources of EMFs in your life, and the reason for this is because, I mean, I have, 600 feet from me right now, there is a cell phone tower. Then my neighbors will have Wi-Fi that I'm impacted by. And then all the cool stuff that I've got, I love Oura and I love a lot of the devices that I'm using. They all work on Wi-Fi, Bluetooth and my cell phone is a pretty important part of my life too, so I think those small steps are allowing you to release tremendously already your exposure and then, don't stress it too much either. I think at the end of the day, it's something you promote as well as a better living today and better health tomorrow and not a, "Lock yourself in a basement today and wait for your life to go by."

Dave:

Yeah. You're surprisingly sane about this, Arthur. I mean, there's people that are like, "We live in a blue-lit, microwaved world and we're all going to die." I'm like, "Guys, yeah, excessive blue light isn't good for you." I've started one of the early companies that work on that problem. But you know what? If I go into a store without my special glasses on, I don't feel like I'm going to die. It's not a clear and present danger. It's one of those things that chips away at you. So like, "Yeah, I was near a Wi-Fi. I took appropriate precautions."

So I love my cell phone, I use it. Right now it's on a little device, one I just posted in a blog post, where I have wired ethernet going into my phone. It's on airplane mode and I can still use all of the stuff on the phone expect for calling. So that's kind of cool. It didn't cost me anything, I needed a cradle to charge it anyway, now my cradle gives it data and I just don't think about it. It was a one-time change.

But do I think even a little bit when I use my phone, "Oh my god, I'm going to..." No, I don't. And so if you're listening to this, you're going, "I'm freaked out about EMFs." No, you don't need to be freaked out about it. You don't need to be fearful. What you do want to do, though, is say, "Oh, what could I do so I just take a little bit less of that chipping away and so that I'm more resilient?" And most people, they can handle a decent amount of Wi-Fi if their cells work well. But if you eat garbage, you don't sleep, you don't take care of yourself, you have toxic metals, you have all kinds of things going on, you're going to be less resilient for EMFs.

So you're idea of, look, okay, when you're in a high EMF environment, wear Lambs clothing and do a few things and just go on with life. I'm so grateful that you're not in the far out there conspiracy land, because I think Wi-Fi's done great things for us.

Arthur:

No, it has and it's something [inaudible 00:38:18] at a lot of the people who are very much anti-EMF when I say this, but I'm very much pro-EMF in a sense, which is that I think technology is amazing and I'm personally not going to live without it. But at the same time, looking at the studies, the impact that it has on my body on a daily basis is very much real and when we started Lambs, what we wanted to do was like, "Hey, what can we do so that we can keep on using all those technologies, but also completely remove this factor from impacting our health long-term?"

And the reason I say long-term is because a lot of the impact that EMF has takes 10 years plus to develop. And especially when you look at cancer, cancer is something that takes 10 to 40 years to

develop from the start of your exposure. So we can brush it off as being, "Eh, it's fine. I don't feel anything. I'm going to be fine." And just like smoking, you don't develop lung cancer straight away. But then again, if you take a few smokes here and there, are you going to die from lung cancer? Probably not, so you shouldn't stress it out too much.

But if you're smoking every single day and not caring about it, then that's going to be bad, and I think that's the overall idea with EMF is like if you carry your cell phone around you at all times, if you work in an office environment where this 30 Wi-Fis that you can... Or if you're in an residential building with 20 neighbors, you're likely to be exposed to quite a lot of EMFs, but instead of freaking out, what we decided to do is create a solution and keep on living an normal life, a great life, not worrying about, "What are we going to die from?"

Dave:

Let's talk a little bit more about how blocking works, and you've got the WaveStopper tech that I was showing inside my shirt here. How does it work?

Arthur:

Yeah, I'll go back to the inception of the company. So effectively, to give you the backstory that not a lot of people have heard, what happened is, as you said, I've got a background in biology and I started a journey very similar to yours, although I didn't go to the extent that you went when I was a teenager, which was about just trying to optimize a little bit more. I was seeing people getting cancer, cardiovascular disease [crosstalk 00:40:59] friends and family and realized that what I was doing today had a compounding effect on my life tomorrow in my likelihood of developing those diseases.

And so that's how I started hearing about EMF and discovered that EMF was a Class 2B human carcinogen, just like gasoline exhaust fumes for instance, and for me that was really an a-ha moment. And the same day, went to dinner with friends and started polling people. "Have you heard about EMFs?" "Yes." "Have you heard that it can be harmful?" Most of them replied, "Yes." And "Have you heard that you shouldn't be keeping your cell phone in your pocket?" "Yeah." "Where is your cell phone right now?" "In my pocket."

Dave:

Exactly.

Arthur:

That was the moment where I was like, "All right, we're not going to change that." And my cell phone was in my pocket as well, so I was not blaming them. So I started looking into, "Okay, what can I do to block these EMFs?" Turns out EMFs are the way your cell phone is communicating with the outside, so it's very, very hard to have a cell phone that works without EMFs, so the only thing we can do, we can't shield the phone, otherwise you have a phone that is effectively on airplane mode, and without your device, it's not of much use. So the only thing we can do is shield the body and then I started looking into all what kind of physical principle can we use to block EMFs?

And there is one physical principle that is actually used in NASA space suits, and that's how we got the idea, which is called a Faraday Cage, or electromagnetic shielding and the way this works, it's very, very simple. Radiation, as we said previously, have a wavelength and because of the electromagnetic nature of EMFs, they cannot penetrate a mesh of metallic fibers if the size of the holes of the mesh is smaller than the wavelength of the radiation. In normal terms, what that means is try to

go through a fence if the size of the holes of the fence is smaller than your head. You're not going to be able to make it.

With one caveat though, the fence needs to be all around whatever you're trying to protect from you going inside, otherwise it's not much use, and this Faraday Cage, and the cage gives it away, is the same principle. It needs to be an enclosed mesh of metallic fibers to block radiation. And that's what we did with the WaveStopper technology. So we integrated a mesh, a specially woven mesh of silver fibers designed in order to block radiation from the frequencies that we use with microwaves today and that's very important as well. It's not just adding metallic fibers and you're good to go. It's adding them with the right pattern so that you're effectively blocking the radiation.

Dave:

So you have to tune the mesh to the type of EMF that you're blocking?

Arthur:

That is correct, yeah. And then-

Dave:

Which makes a lot of sense. Okay.

Arthur:

And then once you have this mesh that works, which frankly was a big part of the development of the technology. It took us a while to get to the results that we wanted, which was over 99% of EMF blocking. And right now we're at 99.2 to 99.9, depending on the frequency. Once we had the mesh, we needed to put it all around the garments and we did quite a lot of experiments as well to make sure that we were effectively protecting the area that we're protecting.

So if we were, for instance, taking a piece of underwear, since we're on sexual health right now, for men, and we were putting our fabric just on the crotch area, that would not protect the testicles. That would even, potentially, have the opposite effect.

Dave:

It's like a parabolic dish. You get the EMFs in and then just focus it right there.

Arthur:

Yeah. So the only way we could do this is effectively put the WaveStopper fabric all around. And so what we did, in order to make sure that the technology's working, because when we sell protection to our customers, when we are providing peace of mind, we want to make sure that we're providing the right thing. We tested the technology on what's called a human phantom, which is a mannequin equivalent of a human body from a physical and chemical perspective, meaning it reacts the same way as your human body does to EMF and we're making sure that there is no interference from your body on the technology itself.

And when we measured this, what we're seeing is that we have a 99.9 to 99.2% reduction in EMF when wearing Lambs. And that was, for us, a sweet spot of like, "Okay." And then a lot of the additional work was, "Okay, how do we make this comfortable now?" And good looking and-

Dave:

They look like normal underwear. They're comfortable and what I also appreciate is, okay, you've got silver fiber, this stuff is relatively expensive, but they start at $29, so they're not the tighty whitey. I've no idea how much the world's cheapest underwear are, but no one wants to wear those anyone. But they're in line with a pair of boxer shorts. They're not $150 for a pair of boxer shorts kind of thing. So I believe they're within reach and they also have a side effect, the T-shirts especially, you just don't get body odor when you wear them. And it's because silver has an effect on bacteria. Talk about that.

Arthur:

Yes, silver ions effectively break down bacteria membranes and the bacteria in your sweat is what causes the sweat to smell. So it's a very, very cool side effect and the other one we talked about, heating, at the beginning, right? About the heating effect of EMFs and how none of these studies focus on this because in theory, it's low power enough to not impact you. That being said, the standards that have been set are based on a five to 15 millimeters spacing between the cell phone and your body, which in real life is rather up to three millimeters, no less. So harmful is the potential impact of heating, hard to know and it hasn't really been studied, which is we know is that we're definitely not following the safety standards that were originally put in place.

But silver is also a thermal conductor, so it diffuses heat. So even if there were impact from the heat of your cell phone, the silver in itself would diffuse this heat so it's not focused on one specific point, which is right next to where your cell phone is.

Dave:

Interesting, it's like a heat sink for your whole body. I never thought of that, but it makes sense. Now you guys make the boxer briefs, which are definitely, I think, your top thing. T-shirts, I'm actually a really big fan of the T-shirt. When I fly, you'll pretty much always see me wearing one of your T-shirts. You probably won't see me wearing the underwear, but that doesn't mean I'm not wearing them. And things like hats, which I don't actually wear that often when I travel, but I have one of them. And then what I don't know, though, is I don't see underwear for women. Why is that?

Arthur:

We do-

Dave:

Oh you do?

Arthur:

So we recently launched that.

Dave:

Okay. That's a new thing, all right.

Arthur:

And the why do we just have it now versus before is we're still a relatively small company, we're not like Nike with billions of dollars in the bank where if we create a new line of products we can have 20,000 variation of them. We're still a small company, so we're trying our best to accommodate the demands

from our customers. We started with men because, frankly, we were guys at the beginning starting the company.

Dave:

Okay, that was the most truthful answer I've ever heard.

Arthur:

I'm not a good bullshitter.

Dave:

Look at wear the ovaries are. It's almost like a T-shirt is going to be more effective for women. A T-shirt and underwear, but I mean, protecting the vagina's nice, but if you're looking to go after the reproductive parts themselves, they're harder to protect, because they're right in the middle for women compared to hanging out there for guys. So I think there is evidence if one of a pair of partners was going to get EMF-blocking underwear, probably the guy should get it first. But I think they both should have it.

Arthur:

So we actually designed the underwear so that it would... When we tested specifically, we tested with the EMF meter being where the ovaries are, and so we designed the underwear specifically so that it reduces the amount of radiation that you have on your ovocytes. That was pretty tough, and then the T-shirt, obviously, is great to protect you... There are two types of cancers that have been strongly linked with an increase of EMF. One of them is glioma, which is a rare type of brain cancer that is very deadly as well, and which frequencies has [inaudible 00:50:57] doubled in the UK since the launch of cell phones. So might be correlation doesn't important causation, but anyways.

And the second type of cancer is breast cancer, that is very much demonstrated as well for women. So the T-shirt was very [crosstalk 00:51:15]-

Dave:

What about bras? You're not doing that yet? I'm looking here, you've got the Faraday Cheeky Brief, so last time I looked I didn't see those. Not exactly the sexiest pair of underwear for women I've ever seen, but at least they're cheeky and they look like they'd provide full coverage, which is part of the problem, right? What about bras versus T-shirts? Breast cancer's such a thing.

Arthur:

It's coming.

Dave:

It's coming.

Arthur:

I mean, we sell this T-shirt because it protects effectively everything, right?

Dave:

Yeah, of course, it's probably better.

Arthur:

Like, your heart, your breasts and your gut. So the way we design the products, we're very different from a traditional apparel brand in the sense that number one, this is a very different value proposition that we're providing you with. It's health and wellness, not style, even though we try to make them pretty stylish. But the way we designed our products originally was looking what are the organs that are most impacted by EMFs and what can we replace that we already wear a daily basis in order to protect these from EMF? And genitals and then your gut, your heart and your breasts and then finally your brain. So we have hats and we have beanies for this too.

And that's how the original products came to be, but then if you happened to order to Lambs, you'll receive an email from me, shortly after your order hopefully, which asks you like, "Hey, what else do you want from us?" And that's something that we do quite often is I try to spend as much time as possible with our customers who understand what the needs are and what types of products that we're not doing that they would love to see in order to have more of a daily protection. Because Lambs is intended to be a daily wear brand.

Dave:

Awesome.

Arthur:

Yeah, so that you can effectively live your daily life without exposure.

Dave:

Well, you think about it, you're going to wear underwear every day, so you might as well wear underwear-

Arthur:

Most people would.

Dave:

... that have an added benefit, because you had to do it already. And a lot of the best bio hacks, you're going to do something every day, you're going to drink your coffee? Drink it in a certain way and it does more for you, but it's an existing habit. And what would you recommend for people who like to go commando? No one's ever ask you that before, have they?

Arthur:

Nope. This is the first time. I don't have a smart answer to that. I don't know, man. Wear the T-shirt as a robe?

Dave:

I love it. Well, one of the things I've committed to, for years people have been saying, "Dave, tell us what you do." And then I've been kind of like, "Let me just talk about the why and the what and all that." But what I've started doing in 2020 and 2021 is I'm like, "All right, I'll talk about it, but then if I talk about,

you guys get a discount." You guys go to getlambs.com, G-E-T, Lambs, L-A-M-B-S, like little wooly lambs.com, use code DAVE20 and Arthur's going to give you 20% off, which is a meaningful savings.

So it is around that time for Valentine's day, so pick up the appropriate type of underwear for your partner instead of something that probably looks more like a G-string. Get them this and say it's because you really like their reproductive organs and you want them to last for a long time. Telling you, it's a romantic thing to do. So getlambs.com, use code DAVE20. Yeah, I'm wearing the shirt right now. This is the stuff I actually do and now you guys are saving money if you listen to the show.

Arthur, thanks for offering that to people and just thanks for making cool stuff. There's so much stuff out there, like Bluetooth toasters that just don't need to exist, so making something that you didn't know if anyone would want to buy it, something that has science behind it and something that is actually comfortable and wearable and looks normal, I appreciate that. Because frankly, I don't want to look like an astronaut when I'm traveling out and about and flying and this is just normal clothing. It's just normal clothing that doesn't smell bad over time and blocks EMFs. So same thing I always did, which was dress, but I got added benefits, so thank you.

Arthur:

Yeah, I mean, as you said, there are a lot of stuff that shouldn't necessarily exist. There are also a lot of stuff that do deserve to exist and that use EMF and so our reason being with Lambs is like, "Hey, we want to have this better living today. We want to have it all and we also want better health tomorrow." So that was the reason, the mission why we started the company and so far it's been a blessing to be able to do this and to be able to do this with people like you, who's obviously a very strong inspiration in the field of better living today and better health tomorrow.

Dave:

Awesome. Well, I will look forward to seeing you in person back when travel is re-legitimized, and I'll probably be wearing a Lambs T-shirt and maybe some other stuff that you just aren't going to see. Have an awesome day.

Arthur:

You too. Thanks, Dave, for having me.

Dave:

You guys remember that code? It's DAVE20 on getlambs.com. Save yourself some money and if you decide you don't want any sort of EMF protection in your underwear, at least put your phone on airplane sometimes. Turn off your Wi-Fi, do the basic stuff. Perfection not required. Fear not required. This is one of those bio hacks I've talked about for 10 years. The science is very real. 30,000 papers? Eh, it might be worth paying attention to. Have a beautiful day and I look forward to the next episode of our sexual wellness series.