

Making a Case for Saunas: Using Light to Optimize Health

A Special Interview With Brian Richards

By Dr. Joseph Mercola

Dr. Joseph Mercola:

Welcome everyone. Dr. Mercola helping you take control of your health. Today we're going to talk about one of my favorite, absolute favorite, and I consider essential biohack, which is sauna. I did an article earlier this year on sauna that I think is really an epic and landmark article. Quite truthfully, I don't believe anyone has ever written as comprehensive and detailed "how to do sauna" article in the past. This is epic and I was kind of surprised that people didn't really get it, but we're going to talk to Brian Richards, who I'm a big fan of his company because he provides the basis for what I believe is creating the best sauna.

Dr. Joseph Mercola:

We're going to talk about why sauna is so important, because it's not just for detox. Absolutely not just for detox. That's one good benefit, but there's two other major benefits and not all sauna types provide these benefits. We're going to go into details in specific. So, Brian Richards is the founder of SaunaSpace, a really clever entrepreneur who's committed to providing high-quality resources to help you take control of your health, and actually start a process of somewhat substituting for one of the primary deficiencies that most people have in their life. That it's not insufficient sun exposure.

Dr. Joseph Mercola:

So, sauna obviously is not going to create vitamin D, but it can provide something that's almost equally as good. We'll talk about that in a bit. So welcome and thank you for joining us today, Brian.

Brian Richards:

Thank you for having me, Dr. Mercola.

Dr. Joseph Mercola:

Okay. So, where do we start? So, there's so much-

Brian Richards:

Start with the light?

Dr. Joseph Mercola:

Yes, start with the light. I'll put a link to the previous article, the landmark epic article I referenced in the intro so that people, if they want, they can look at that. It's behind a Substack firewall at this point, but we have a large number of readers who have Substack access. It's available if you want to participate in Substack. So anyway, that article goes in great detail of the benefits of sauna.

Dr. Joseph Mercola:

So, I don't really want to dive deep into there. I want to really go into teasing up some of the details of how we can achieve these benefits, but essentially the foundation, the premise for why this is such a useful tool. The scientific validation for that occurs from an evaluation of where sauna is the most popular in the world, which is Finland, and almost all the primary, basic research is based on that.

Dr. Joseph Mercola:

I want to explore with you because this is a foundation. It really is what gives us the confidence that we can be so spectacularly assured that once someone implements these therapies, that they're going to get benefits. Not some benefits. We're talking spectacular reductions in all-cause mortalities and radical improvements in health. So, the basis of a Finnish sauna which I'm sure you've studied carefully, is a room that has a heater of some sort.

Dr. Joseph Mercola:

That is essentially a dry heat. But from my best understanding, it's far-infrared only, because the heat is carried infrared. There may be some mid-infrared, but I don't think there's any near. So, maybe you can help us understand that and more importantly, describe the most common ways that — Finnish sauna is also referred to as the traditional sauna — these traditional saunas used to create the heat.

Brian Richards:

Yeah. The history of sauna goes back thousands of years really and every human culture has a sauna tradition and the original sauna traditions are woodfired saunas in Finland. Which still exists today, but not just there. In Russia, the Russian Banyas, the Japanese or the Korean hot pools. They had saunas actually in Ireland, like little cave saunas. Of course, the native American sweat lodges. So, you see various ways of sweating passively inside an enclosed space that's heated up that dates back a long time. But nowadays everybody uses, or most people use electrically powered saunas. Very few people have access to a woodfired sauna per se.

Brian Richards:

Interestingly, the first electric leap powered sauna is the sauna technology that SaunaSpace incorporates. It was invented in 1891 shortly after the advent of the incandescent light bulb in 1887. Dr. John Harvey Kellogg invented what's called the electric incandescent light bath. He was using, in this Victorian style cabinet, an array of a large number of incandescent light bulbs. He knew there was something special about the light. He said, "You know what? This might be a better way to do sauna. Let's use this, these light bulbs and this light to heat the body radiantly." Little did he know how powerful the photobiomodulation benefits are that I'm sure we'll talk about in a minute, but anyway that was-

Dr. Joseph Mercola:

That sauna is 130 years old?

Brian Richards:

That's 130 years of safe use. Yeah. He used it for over 50,000 patients with chronic disease in the first decade of the 20th century. He wrote a book on it called "Light Therapeutics." He published that in 1910. So, Dr. Kellogg's "Light Therapeutics," you could read it online and it's fascinating that there was such a high-level understanding of light therapy over a hundred years ago. Yet, like Arthur Deanshaw's work and other uses of life therapy in the early 20th century, it was kind of lost. Kind of lost in time for a long time.

Brian Richards:

When people commonly think of an electrically powered sauna, they think of the Finnish hot rock sauna. So, it's a big 30-amp[ere] heater or very high electrical use heater that heats up electrical coils in a little box that sits on the ground in the sauna and has hot rocks on the top. That heats up the air really hot to the average Finnish saunas, like you say, about 170 degrees Fahrenheit or so. That is what is the most common type of electrical sauna prior to the introduction of infrared saunas.

Dr. Joseph Mercola:

Okay. So, I've got some questions on there because at least I'm confused about some – if I'm confused about it, I'm sure others are. So, would it be fair to classify the heat that's being rated in this electrical one, the contemporary version of the Finnish sauna, which is typically electric, that heat is given off as far-infrared?

Brian Richards:

Well, it's not even really infrared so much. Yeah, the heater glows a little bit so there's some infrared there, but it's primarily heating the air conductively and then the hot air moves around through convection. Then the hot air heats up the user conductively. So, the hot air and the body touching the hot air, the air heats of the body through conduction directly. So, from the outside in. I think when people think of infrared heat, they think of radiant heat.

Dr. Joseph Mercola:

Right.

Brian Richards:

It's really not that. It's more of a conductive heating system. So you heat the air up hot just as the woodfired sauna would do the same. It's primarily this really hot air around that will slowly heat the body up.

Dr. Joseph Mercola:

If you had a woodfired sauna, you'd definitely be getting infrared?

Brian Richards:

You would be getting some, but I'm sure we'll talk about it, but in terms of biologically-

Dr. Joseph Mercola:

-beneficial-

Brian Richards:

-relevant photobiomodulation levels, they're there, but certainly not what you get from an incandescent lamp or the sun.

Dr. Joseph Mercola:

So, a big downside of the Finnish sauna, at least the contemporary. Even the traditional ones would be no infrared or very clinically insignificant amounts of infrared.

Brian Richards:

Yeah. Very little. You're talking about the sun is over 40% infrared A, near infrared and from a photons-per-second perspective, it's like 70% photons per second or near infrared. So, if you're not somewhere close to that, you're not in that ancestral context of what's biologically relevant and what we're evolved to get. There is a little bit from these lower-energy infrared sources, but not nearly what you get from the incandescent bulb.

Dr. Joseph Mercola:

Okay. This is great because it's confirming some of my suspicions. So, I guess the other major issue with implementing the traditional Finnish-type sauna is that you mentioned there's an electrical heater of some sort to create the conductive heat that's produced. So, in that process, one has to be very careful because any type of electrical unit is going to potentially have EMFs (electromagnetic fields).

I'm wondering if you, and that's one of your specialties, which was what really caused me to massively embrace SaunaSpace early on, because of your commitment to really mitigating it against the dangers of EMF. So what is your experience in the sauna and the heaters that have been used in Finnish sauna with respect to their radiating EMFs of both either magnetic and electric fields?

Brian Richards:

The primary EMF stressor in those is probably electric field. It's just as bad as magnetic field. Magnetic field is a little more difficult to mitigate, but electric fields in any unsealed wiring are significant. If you talk about an electrical heater that uses 20 or 30 amps, that's a lot of voltage that in an unshielded scenario. Electric fields travel through water. If they travel through humidity, in the air and in the stools and everything. That's why they're so pervasive at homes. You think my unshielded electrical wiring in my room is no big deal because it's far away from me.

Brian Richards:

But the fact is it can travel through the air, through the moisture and the air and in the carpet and the wood in the floor and reach you and then increase your body's voltage. So, having a 20-or

30-amp electrical source from a Finnish electric heater that's not shielded is problematic, but it's not just those either.

Brian Richards:

It's really any electrical device has the potential to subject you to undesirable electromagnetic stress. So, the traditional electric heat Finnish sauna, the electric hot rock sauna, I would say is actually not the most common sauna out there. The most common sauna out there really is the far-infrared sauna.

Dr. Joseph Mercola:

That's certainly true in the United States. Is that true worldwide globally?

Brian Richards:

No, but you're right. In Finland, sauna's a mainstay. I think they actually have a mandate there for building new homes. That they must include a sauna in new buildings, but most countries are not like Finland. I suppose my experiences most – I have most of my experience here in the U.S. where we are based. Here in the U.S., the most common sauna out there is the far-infrared sauna that uses either ceramic tube emitters or it has little black carbon panels that emit primarily low-energy, long wavelength far-infrared.

Brian Richards:

In my personal testing of those, they tend to all be high electric field and high magnetic field. Especially how you sit in those, your back is usually at very close proximity to the ceramic heater itself. You're within that magnetic field. Then without using shielded technology, you are exposing yourself to electric fields. Both in the Finnish electric hot rock sauna, and in the traditional far-infrared sauna.

Dr. Joseph Mercola:

So, for those who may not be familiar with it, the magnetic fields are really problematic, but fortunately they fall off typically very rapidly. So that with your usually a few inches, but certainly within a foot. If you're a foot away, it's almost insignificant because of the rate at which they fall off, but that's not true for electro fields. They really permeate quite [a] distance. So, when did far-infrared saunas become widespread in the U.S.? Is it 20 years ago or so, 15?

Brian Richards:

Yeah, maybe even more than that. The ceramic emitter, the far-infrared ceramic emitter technology, I think dates back to the late '60s-

Dr. Joseph Mercola:

Wow, okay.

Brian Richards:

-early '70s. But as far as the incorporation into consumer products that we call far-infrared cabinet saunas, you see that more in introduction in the '70s and '80s. At a time in which there

was no concern over electromagnetic stress. Nobody had any idea that – it was not mainstream at all. There was no deep study. There wasn't the Martin Paul research and other research. There was the body electric and some indication of it.

Dr. Joseph Mercola:

Yeah, sure. So that's really interesting. Kind of like smoking was in the '30s, '40s and '50s. People had no clue that it was dangerous.

Brian Richards:

But there was obviously an issue there. It was just-

Dr. Joseph Mercola:

Yeah. A hundred percent. Similar story. It's an analogy I made quite clear in my book "EMF*D." So, I want to get back to the far infrared saunas, because so many – some of the hugest pet peeves I have in the health industry is against many of the far-infrared saunas manufacturers for essentially blatant lying, and fraud and deception. That should at least should in reality, truth be told, their company should be shut down for fraudulent advertising.

Dr. Joseph Mercola:

So, this is not true for all of them, but it's true for many, certainly. But many claim that there is – there's a lot of claims they make that have problems with. One is that it's an EMF-free sauna or low-EMF sauna. My experience with that, and I want to get your input on it, is that the most, with the exception of one, maybe two sauna manufacturers that make this claim. That it's true, typically, that the magnetic fields are really low. They mitigate against that, which is the biggest claim against most of these devices. That they had high magnetic fields.

Dr. Joseph Mercola:

So they were able to lower it to essentially biologically reasonable levels, but they almost every single one of them failed to mitigate the electric fields. This is particularly true for... I'm not sure the type it's called, but it's like a little tent. It's much smaller than yours, where your head is out of it. I could think of two companies specifically who are just terrible for this because of the claims they're making. They just lie. They say these electric fields that they have no EMFs and their electric fields are through the roof. We've measured them many, many times. It's just outrageous. So that's my experience.

Dr. Joseph Mercola:

There's a few that get it that have actually low EMFs, both electric and magnetic fields, but I've only seen that in one that I know of and could be another one that I just can't recall at this time. So, what is your experience in that?

Brian Richards:

My experience is really that, and I've measured many brands over time. You're right. The far-infrared style of sauna comes in a couple different forms. The most obvious one is the cabinet style that looks like a traditional Finnish sauna, but there's ceramic tube emitters or black carbon

panels in the walls. All the ones that I've seen have high magnetic fields and high electric fields. There is one company that I actually measured with Brian Hoyer, as it were. We were together at a conference and it was low in magnetic fields, which was great. That's a great improvement, but the electric fields were like you say, they were through the roof. They were beyond millivolts and hundreds of millivolts into the volts range.

Dr. Joseph Mercola:

I had one that I measured that I was given to try. It was tens of thousands of millivolts. It was 60,000 millivolts.

Brian Richards:

Yeah. It was like 10 volts. That's like a lot. Yeah. So, that's my experience too, especially the style that's a little more portable where your head and your arms kind of stick out. It's more of a foil-

Dr. Joseph Mercola:

Usually it's the head. Usually the arms are still in there.

Brian Richards:

Or the arms can be still in, but it's a foil bag. It's more marketed as a portable far-infrared sauna. So, they all have issues. Even the ones where they've managed to minimize the amount of magnetic field, they all seem to have electric field issues. Furthermore, they don't offer any protection from the ambient electromagnetic stress that's in the environment. That's why, for example, one of the products that I offer has a Faraday liner system that protects you from the ambient electric field.

Brian Richards:

It's not enough to say, "Okay, let's shield this technology. So, there's no electric field or magnetic field exposure from the SaunaSpace panels on the user. What about making their sauna experience electromagnetically clean and pure and protecting the ambient EMF?" I worked really hard to provide that sort of solution. You don't see that really in any of these infrared products, or Finnish saunas either, but I don't like to disparage any companies. I think there's some great products out there.

At the end of the day, Dr. Mercola, I think if you sweat, and you get that sweat response, you get that elevated core temperature increase. You're getting great benefit, but to be exposed to the oxidative stress of EMF stress during the session, for me, it's like not ideal. That would be like meditating in a polluted environment or something.

Dr. Joseph Mercola:

Yeah. I agree. I don't really want to push that benefit because it's clearly a benefit, but in my view, it's almost the icing on the cake. Because you have to accept that it's a primary benefit. You have to believe that EMF are dangerous. Because essentially, if you don't then adopt that. The people who believe that, typically have done pretty good work in their own home to get a relatively low EMF exposure like I have in my house. So, I don't feel badly although I'm using

one of your systems that is shielded. I would if you have no problem using a non-shielded because my ambient levels are so low, relatively speaking.

Brian Richards:

My original healing story, Dr. Mercola was with a bricolage version of what I offer now. There was no electromagnetic shielding at all, and I still had incredible journey.

Dr. Joseph Mercola:

Yeah. I want to make it seem that we're claiming that, "Oh, this shielding is the cat's meow, you got to have it." It clearly is beneficial. No question. But the benefit you're going to get is kind of related to your ambient exposure and that's highly variable. So, we can almost put that to the side. It's another great benefit, but the core that I really want to discuss is that the comparison of these technology. Because people, routinely, in this field are going to hear the benefits of sauna, and they're going to be intrigued about it and seek to implement themselves.

Dr. Joseph Mercola:

I guess the foundational concept that I'm not sure I mentioned in my original sauna article, but is sort of intuitively obvious, is sauna is a really personal thing. Because if it's going to be an effective sauna, you're going to release toxins that are stored in your body. Those toxins are going to contaminate the enclosure that your sauna is in. So, you really, ideally, do not want to be sharing a sauna with someone unless you're really careful about cleaning the sauna and absorbing those toxins that are released from the previous user of the sauna. So, that, in my mind almost eliminates the use of sauna in the gym or some other therapeutic intervention. What's your take on it?

Brian Richards:

Well, the counterpoint of that is that the Finnish sauna is a social experience. They are always in there and they're getting together and they're sweating it out. But I definitely agree with you that the sauna, it's an intimate experience, it's something that you want to have your own. I of course share mine with my wife, but I live with my wife. We have the same microbiome and all that. It's-

Dr. Joseph Mercola:

Well, also you both live pretty cleanly so she's not excreting a lot of toxins. She's been doing sauna for a while. So, in that scenario, the exposure is relatively minimal.

Brian Richards:

Yeah. But I think ultimately all these things, again, there's definitely ways you can tweak the experience and improve it, but ultimately just getting in there four times a week, that's the results of the Dr. Rhonda Patrick study that you referenced. The study benefits of sauna and these long-term Finnish studies, they show that what you need to do is use it four times a week. Even once a week's really not as amazing as three or four times a week. So, having a sauna at home for nothing else, just for the convenience and the ability to maintain that discipline of frequent uses is the most important thing.

Dr. Joseph Mercola:

Okay. Now, I want to dive into what I think is probably the most significant benefit in my view, my humble view of being a passionate advocate of natural health-healing strategies is, this is something I'm more really relatively recently appreciated long after I've gotten an interest in sauna. This is the issue I referenced and you referenced earlier with respect to photobiomodulation. So, that, essentially is a fancy term for ascribing the biological benefits of light exposure to the human body. So, optimizing that. So, the reason this is important, in my mind, is that – maybe you have the numbers on this, but I'm pretty sure they're shocking. The number of minutes per day that the average person in the U.S. is actually outside in the sun.

Brian Richards:

Oh, it's woeful. I don't know what it is.

Dr. Joseph Mercola:

It's probably under 10 minutes-

Brian Richards:

Yeah.

Dr. Joseph Mercola:

-in the guess. They're wearing shirts and long pants. So, it's almost no exposure. Almost no clinically significant exposure to the sun. There is just absolutely no doubt in my mind that it's this prescription for health disaster. You cannot violate one of our most pervasive ancestral practices, which is being outside regularly for long periods of time without significant biological consequences.

Dr. Joseph Mercola:

So, the only sauna that provides photobiomodulation despite some of the absurd, ludicrous, insane claims that some of the far-infrared sauna makes. That they're a “full spectrum far-infrared sauna.” I've never seen anyone that is. Never, except for yours, because it truly is indeed a full-spectrum infrared saunas. Well, those are analog too. That means they produce it over a wide range. It's not just several discrete frequencies like they use in the PBM units, the photobiomodulation units. Like the three primary manufacturers out there, which has its own benefits. I think they're all good. I use all three of them. I use natural sunlight. I use the mid-infrared sauna like yours, which I think is the best description for it. Then the sun exposure.

Dr. Joseph Mercola:

So anyway, the reason why exposing your skin to the sun is so useful is not just for vitamin D. I'm not going to spend a lot of time on that because I've talked about it for over two decades and people know how passionate I am. They've probably read and listened to my information on this in the past, but I have not swallowed a vitamin D pill for over 15 years. My vitamin D levels are optimal. That's because I'm out in the sun and I'm out in the sun with no shirt and I'm in shorts and pretty much 80% of the days of the year, this is happening. There's a numbers-

Dr. Joseph Mercola:

I'm traveling and if the weather is less than good, or I'm just tired, I won't do the walk, but I almost always do. I didn't understand or realize, I kind of intuitively knew there was something else going on, but I didn't really fully appreciate it. That infrared exposure and as you mentioned. Well, 40% of it is near-infrared of the light coming out of the sun is near-infrared, because only 7% is ultraviolet B. I think it's 39% is visible light. Then 54% is infrared, 40% of being near, the other being mid and far.

Dr. Joseph Mercola:

But the vast majority of all of it if you could sequence it, is near infrared. The benefit of near-infrared is it increases melatonin, what's called subcellular melatonin. In the past we thought almost all of it came from your pineal gland in response to bright light exposure in the daytime and no light exposure at night, but that's only 5%.

Dr. Joseph Mercola:

Ninety-five percent of it is in your mitochondria. To me I believe this is the biggest benefit of using your type of sauna, is that you're going to increase subcellular mitochondrial melatonin, which is going to radically decrease oxidative stress, lower your risk of almost every single chronic disease. I think this, this is the mechanism, maybe not the primary. It can't be because we know traditional saunas don't do that, but it's probably partially related. They actually couldn't be that because you're just getting heat. So, it's got to be the other reasons, but I'm convinced this is a more powerful strategy to optimize things. Because not only are you getting the detox and heat-shock protein benefits, we'll talk about in a bit.

Dr. Joseph Mercola:

But you're getting the increase in that melatonin, which is going to really improve your mitochondrial function overall. Increase your energy levels and ATP (adenosine triphosphate) production and decrease damage to your cells, your DNA, cell membranes, protein stem cells, all of it. So, anyway, that's a big thing. So, what's the question here? The question is yours is the only sauna that does this. No far-infrared sauna does it and no Finnish sauna that does it.

Brian Richards:

It's a question of more bang for your buck. It's the dual therapies together. We don't have to belabor necessarily the benefit of sauna. I think you Dr. Mercola have highlighted in your latest blog article. Dr. Rhonda Patrick has shown in her review article, the stunning benefits that came out last year. It's essentially increasing your healthspan. Increases the years of your life that you're really healthy and it reduces your risk of dying of all things. So, it's really great, and everybody should be doing sauna, but then if you look at photobiomodulation, which another way to define photobiomodulation is the use of near infrared light to heal and repair degenerate, and damaged tissue and cells, and also optimize healthy tissue.

Dr. Joseph Mercola:

I like that definition. That's good.

Brian Richards:

Yeah. That's a recent one I've just read from an article. You're using light to heal damage and also optimize what's there.

Dr. Joseph Mercola:

Not just light. Near-infrared light.

Brian Richards:

It's near-infrared light. Like you said, if you look at the spectrum of the sun, 43% is near-infrared. If you add in red, it gets to be over 50% is in this photobiomodulation range. That photobiomodulation is light controlling biology, but in this case, it's all about near-infrared light activating healing and repair biology in the body. The mitochondrial systems are amazing. You mentioned the mitochondrial melatonin systems. Melatonin's such a powerful antioxidant, but if you look at it kind of in the macro, it has, though it's a different biological system, it's having similar benefit overlap to sauna. It's repairing damaged tissue. It's improving protein function. It has antiaging effects in the cells in the DNA and the epigenetics, and it's boosting and modulating the immune system.

Brian Richards:

People are using it for inflammation reduction, also sauna for inflammation reduction. So, if you look at the list of photobiomodulation [benefits], the list of sauna [benefits], there's so much overlap that it's like, wow, these are probably the two most powerful things you could do for your health. Especially here in the Northern hemisphere in the Western culture, we have the highest incidents. The number one causes of death in America are cardiovascular disease and cancer, currently. Also worldwide, it's quite similar, but in the Northern hemisphere, we also have the highest incidence of neurodegenerative diseases like MS (multiple sclerosis), and Alzheimer's and dementia. Both of these therapies, this near-infrared light therapy and the sauna therapy appear to be quite beneficial for neurodegenerative diseases.

Brian Richards:

That was a later, I think, conclusion of that Lacanian study and that long-term finished male study was is not just good for cardiovascular disease for reducing your risk of that, but also reducing your risk of Parkinson's, dementia and Alzheimer's and so forth. So, if both of these things are doing that, and if it's just a matter of the technology you use to heat the body and that's how that technology is available. So, it's just like, well, why would you not do sauna that way? So, it comes down to the form of the light.

Brian Richards:

A couple other things to note about sunlight is it's not just majority near-infrared and from a photons perspective, photons per second perspective like I said before, 70% of your photons per second you get from the sun is near infrared. It's also not so much far-infrared. If you look at the spectrum of the sun, it's only about 3% far infrared. So, we don't have much historical exposure to it. One could argue maybe from an evolutionary perspective, that's why our mitochondria have not evolved to harness that. They're designed to harness the number one stimulus, which is the near-infrared portion.

Brian Richards:

Again, on the other side of the spectrum like you said, the benefit of dose-dependent, ultraviolet light exposure for vitamin D production is great. But that's still a minority of the dose you get from the sun. The biggest dose is near-infrared. It's among other things refilling daily your antioxidant reserves in your body to do cell turnover and repair, and just all the things. Our bodies are so complicated, they're constantly needing to fix themselves and correct themselves. Otherwise, they get out of whack really quickly.

Brian Richards:

It's just like, well, why would you not do the two together? Also, people say, "Well, I get a lot of sunlight. I live in Florida. I don't need a SaunaSpace. I don't need photobiomodulation because I'm in the sun every day." They're close. Also the sun and all the photobiomodulation in the world doesn't sort of address some of these aspects of heat-shock protein amplification and detox that sauna does.

Brian Richards:

We live in this modern toxic world, which a veritable tidal wave of toxicity, it's more than ever that we need sauna. Because we live indoors in these weird synthetic lifestyles, it's more than ever that we need maybe an alternative source for a daily dose of near-infrared light. That's where the incandescent-bulb-style of sauna becomes such a powerful contributor to maintaining our health in this weird, modern lifestyle that we have. It's totally unnatural.

Dr. Joseph Mercola:

Yeah. Before I go into one of the criticisms that have been [levied] at your sauna strategy, I want to insert a note about melatonin neglect you mentioned earlier. That is that it's about a billion and a half years old. That's what the speculation is. It first evolved in plants. You can make a fairly convincing and valid argument that is the most important antioxidant in our body. Because not only does it directly scavenges free radicals, but it, also, like molecular hydrogen, catalyzes the production of other antioxidants, like glutathione peroxidase, glutathione reductase, catalase, superoxide dismutase.

Dr. Joseph Mercola:

So, these are all quenchers of oxidative free radicals. Even some of the nitrogen ones like peroxide nitrite. Sauna, really, really important. But one of the criticisms that have been level, we talked about, at SaunaSpace, your bulbs have been setups. At least I did in the past and I think others have too referred to it as a near-infrared sauna. When reality is it isn't a near-infrared, it's a mid-infrared sauna. Correct me if I'm wrong, but I think 15% of the radiation coming up from those bulbs that you have are near-infrared. It's only 15 as opposed to 40% [crosstalk 00:35:17].

Brian Richards:

It is more than that. But it's definitely not the same as the sun. So yes, just let me clarify what the spectrum is.

Dr. Joseph Mercola:

Give us the detail. [crosstalk 00:35:25].

Brian Richards:

This is on my website in our learning section. You can see the spectrum of our bulb and compare it to the sun spectrum. So the sun as I said before is about 43% pure near infrared. That's 700 to 1,500 nanometer wavelengths. This thermal light bulb that I've developed, this large 250-watt incandescent heat lamp bulb is 39% near infrared. So, it's a very similar amount of near infrared.

Dr. Joseph Mercola:

How did I not know that? That's crazy.

Brian Richards:

It's more near-infrared than the standard heat lamp you have that's more commonly available. So, I basically tune the filament, Dr. Mercola, to run at a higher Kelvin. So, it does shift it up a little bit into more near infrared, but it's not the same as the sun. Because the sun has a lot of, like you said, a huge chunk of the sun's emission is visible light and ultraviolet light. The difference is with the thermal light bulb that I've developed that SaunaSpace uses, there's no blue light, no ultraviolet light. There's not a lot of red light either. It's all pretty much near-infrared and mid-infrared.

Brian Richards:

Where the sun has a lot of visible light and ultraviolet light, that percentage of the spectrum with the SaunaSpace thermal light bulb is shifted into near infrared and mid-infrared.

Dr. Joseph Mercola:

Okay.

Brian Richards:

So, it is fair to call it a mid-infrared bulb as well, because it's about 40% near-infrared, 40% mid-infrared

Dr. Joseph Mercola:

Okay. I didn't know. So, it's about the same.

Brian Richards:

It's about the same, and then there's about 15% far-infrared.

Dr. Joseph Mercola:

Okay.

Brian Richards:

But it's all infrared. It's interesting. I think it's even better in a sense for heating the body for sauna benefit than the sun. Because the radiant heat benefits come from the body absorbing light through the water absorption. Water absorption starts in near infrared at 980 nanometers at the first overtone of water, but then increases very quickly so that once you're into the mid-infrared spectrum, 1,500 to 3,000 nanometers or so, you're getting strong water absorption. That's a really effective way to radiantly heat the body.

Brian Richards:

So, that's more mid-infrared than you get from the sun.

Dr. Joseph Mercola:

Okay.

Brian Richards:

Far-infrared also could heat the body. It's not a deep penetration, because of the-

Dr. Joseph Mercola:

Let's go into that now, because that's huge. So, I think far infrared from my understanding, it's just a few millimeters of depth of penetration. This is another false claim that most far-infrared saunas, that they want to convince you that it goes deep into the body, but no, that's near-infrared that goes deep to maybe a few inches deep into your body.

Brian Richards:

Yeah. It's complicated. The biology of it is called water absorption, but you know how we mention that incandescent technology is 130 years old. In agriculture, farmers understood this for over a hundred years. You can see old and you can see old Phillips heat lamp bulb product specification sheets that have a little tissue penetration chart where they show, yes, infrared A, AKA near-infrared, is much better for heating biological tissue because of tissue penetration. That's because water begins to absorb light in the near-infrared region, but not a hundred percent.

Brian Richards:

As you proceed into the mid-infrared and the far-infrared, water absorption increases. That is one of the protective mechanisms of our body is the chromophore that is water. It absorbs this light in different ways. Near-infrared light tends to penetrate several inches into the body. There's actually one NASA study that showed that water filtered near-infrared penetrated like a ridiculous amount, like 20 centimeters into the body. Five or 6 or 7 inches. But on average, it's several-inch penetration. Once you get out to this long wavelength low energy infrared called far infrared, which starts at about 3,000 and greater nanometers, the tissue penetration is a fraction of an inch. It's a millimeter or a few millimeters.

Brian Richards:

We're talking about the average photons that go into the body. So, with near-infrared on average, there's some photons that are absorbed by water in the skin, but then others go in and get

absorbed by water in the liver deep in the body. Then others, of course, hit the mitochondrial light receptor protein and activate photobiomodulation. So, every second that you're exposed to millions of near-infrared photons, you're getting a radiant deeper penetrating heat that heats you from within and raises core body temperature more quickly. Because you're not just relying on the hot air around you.

Brian Richards:

That's what I've said for many, many years, basically, since the beginning. The most effective way to heat biological tissue is using a near-infrared-centric light source in terms of using light to heat the body and using light to heat the body via radiant heating will always be more efficient than using just hot air or contact with water, like a hot tub or a bath.

Dr. Joseph Mercola:

Yeah. You're the Harvey Kellogg of the 21st century.

Brian Richards:

I hope I'm not that crazy.

Dr. Joseph Mercola:

Yeah. Well, at least what expects to light therapy and that book that he wrote is freely available. You just have to type in the name of it on your favorite search engine, certainly not Google. Because it was written prior to 1921, it's freely available. There's no copyright protection. Oh, where was I going with this?

Brian Richards:

We're just wrapping up the photobiomodulation discussion. I would just say you don't get photobiomodulation from far-infrared wavelengths, period. There's no photobiomodulation effect.

Dr. Joseph Mercola:

Sure. None. It's zero.

Brian Richards:

It's just heat.

Dr. Joseph Mercola:

Not biologically significant. Put it that way. It may be a fraction of a percent, but it's biologically significant.

Brian Richards:

But with all wavelengths of light, and this is another benefit that, I don't know, it's kind of like EMF protection. It's less well-understood and less well-researched nowadays, but this idea of structuring water in the body and making it more bioavailable, putting it into a more bioactive

state, all wavelengths of light do this. But Dr. Gerald Pollack would say, and I actually heard him on a podcast recently mentioning this.

Brian Richards:

That the best light is near-infrared because that's the only light that penetrates bone tissue. If you're talking about structuring water and having these photobiomodulation benefits in the brain, that's protected by the thickest bone tissue in the body, it's only a near infrared photon that is addressing and reaching that tissue to activate these healing systems.

Dr. Joseph Mercola:

Yeah. That's why when people ask me or discuss this, my views in structured water, I think it's great. If you want to drink it, that's fine, but it's nothing, nothing in comparison to having your body make its own structured water. This happens naturally when you expose your skin to near-infrared. That's the ultimate way to do it. Structured water is important because it puts energy into your body that is transferred to do biological processes, like the simple measure of your red blood cells, which are larger than your typical capillary.

Dr. Joseph Mercola:

They have to squeeze through there and certainly the pressure generated from your heart pulsing or pumping is not going to be sufficient force to get it through there. It's done through the energy that's contained in structured water.

Brian Richards:

Yeah. We're like 70% water by weight, but we're over 99% or 95% water, volumetrically. It just permeates all of our bodies. So, to not have that part of our body working optimally is definitely to our detriment.

Dr. Joseph Mercola:

Yeah. I recall what I wanted to share is that a personal experience. Anyone could have this experience if they engage in a near-infrared sauna, is that you can go into the sauna and your current model I believe, doesn't have an analog thermometer in it. So, you can pick one up for \$10. It has to go up to at least 200 degrees or so, but you can go into the sauna and see the temperature is 160, 170. There's a heat source. It's the bulbs. If you're facing the bulbs, the front of your body, your chest, and the front of your body will start to sweat literally within a minute, two at the most at that temperature.

Dr. Joseph Mercola:

Well, the back, your back is absolutely not sweating, which is a strong clinical confirmation supporting the fact that that heat is going inches into your body and being absorbed by your body, because it's not the ambient temperature that's causing it, it's the heat from the sauna. Anyone can prove this to themselves. This is not rocket science. So, I'm wondering from your perspective if you have a feeling or an impression as to what the difference is. Because I don't recommend people going much above 160 to near-infrared sauna. You can, but I don't think it's necessary because of this fact.

Dr. Joseph Mercola:

Because some people are saying 180 to 200 degrees maybe even higher in a Finnish-type sauna. What do you think the additional temperature difference is in the near-infrared compared to a Finnish sauna? Is it 20, 30 degrees?

Brian Richards:

It's hard to compare the two side by side because of the radiant heating methodology of the near-infrared sauna, of the incandescent bulb sauna, is such that you don't use the ambient air temperature to heat you up really. You're using this penetrating light. It's really [crosstalk 00:45:24]-

Dr. Joseph Mercola:

But you're still getting it though. You're still getting the benefit of the ambient heat.

Brian Richards:

You are, you are. I've always said you need to have the ambient air be above body temperature so the air's not cooling you down. You need to be in enclosed space of some kind. You can't just have the panel in the middle of your room that's air conditioned to 70 degrees and provoke a sweat. You need to have the air above a hundred degrees. But if you do that, you remove the air as a cooling force. Then you can sit in front of this effective radiant near-infrared heating and heat up the body very, very effectively. This is one of the criticisms that's out there that's leveled at SaunaSpace in general. I believe Ari Whitten, who you quote in your article mentions this.

Brian Richards:

This is a misunderstanding that I think exists out there, because it's not an apple's to apples comparison with Finnish saunas. Finnish saunas require the air to be really hot, because they're only using the air to heat the body. Near-infrared saunas that are using incandescent bulbs, use radiant more efficient heat to heat the body. So, even at a much lower ambient air temperature, you can provoke a strong sweat and provoke an elevated core body temperature increase. I would argue that in some ways maybe that's a more prudent approach for anyone who has any sort of health issues of any kind.

Brian Richards:

There's a lot of people that – and that's pretty well-understood. I think Dr. Rhonda Patrick mentions that in her article that if you're not acclimated to the sauna or you have a neurodegenerative condition or any health condition of any kind or for whatever reason, you're not like you and I are Dr. Mercola. Where we're healthy, we're maintaining a healthy lifestyle. We're acclimated to sauna. You can't even handle a Finnish sauna. For what it's worth, I think the near infrared sauna provides a much more tolerable, accessible experience that still achieves what you want to achieve.

Brian Richards:

By that, I mean do you sweat and do you elevate your core body temperature? Me personally, I get into my sauna cold. I don't pre-heat. I only use the four-bulb Faraday sauna. So, I have four

bulbs and I usually lose 1 to 2 pounds of water in about 25 minutes, and 28 to 30 minutes, I lose 2 pounds of water. Infrared about 15 to 18 minutes, I elevate my core body temperature by 3 degrees or so, and then I start to sweat and then I remain in another five or 10 minutes. I try to reach that sort of state of subjective exhaustion that is sort of the goal of sauna.

Brian Richards:

The goal of sauna is not just to be in a hot room. It's to sweat and to elevate core body temperature and get that body response. So that's why people look at the predominant body of research into sauna. It's predominantly on healthy men and women using Finnish saunas that are heated to 170 degrees. But there's a lot of other research out there that supports the use of infrared saunas in general. There's the Waon therapy in Japan. There's these sauna suits even that are kind of funny looking, and there's a really good cardiovascular and thermal regulatory outcome benefits to using these, what, look really silly, these sauna suits.

Brian Richards:

So, this stuff works. It's just a question of how long does the person need or each person, depending on the person's individual health profile and the modality of heat therapy they're using. How long that they need to sit there to elevate core body temperature 3 degrees to lose the average 1 pound of sweat that you lose in a Finnish sauna session, is really quite subjective. So, for me in my sauna, it's 25 to 28 minutes.

Brian Richards:

For someone who is really healthy, really well acclimated to sauna. They can handle maybe more bulbs, maybe an extra panel, but there's others like Dr. Wahl's community of the MS. Dr. Ken Sharlin, a neurodegenerative disease expert. He's actually based here in Missouri. He's dealing with people and frankly, my customer base, it's usually people come to SaunaSpace when they have a health problem. They're not coming from a state where they've solved everything and their amazing discipline like you and I.

Dr. Joseph Mercola:

Well, that's a good point. I really want to dive into that because you're correct. That's probably the biggest criticism has been hurdled at your company, is that you don't get hot enough. But actually, I think because they're not integrating the radiant heat component into their evaluation and analysis, I think they're missing the boat and probably the not getting hot enough could more accurately be hurled at the vast majority of far-infrared saunas that rarely go above 140. There's some that go higher, but not many. Some of them only get to 110 or 120.

Brian Richards:

Right. The average far-infrared sauna is about 140 degrees. If you talk to people who use it, they usually state that it takes them 40 minutes to an hour to sweat or more. That's after preheating for a significant amount of time beforehand.

Dr. Joseph Mercola:

Yeah. With no photobiomodulation.

Brian Richards:

With no photobiomodulation.

Dr. Joseph Mercola:

No benefits. It just occurred to me as you were describing your process that that is a pretty good way to do sauna, because you're doing it gently. But more importantly, while your body's building up this heat response so that it can generate the heat-shock proteins. Which actually modulate the repair and modification of your damage proteins that can lead to neurodegenerative conditions, like you mentioned, like Alzheimer's. So that you really do want to generate the heat-shock protein response.

Dr. Joseph Mercola:

If you're not in hot enough environment, you won't do that. My guess is that the vast majority of far-infrared saunas is you're not getting hot enough. You're just simply, or you got to stay in there way too long. Plus no photobiomodulation benefits, but ultimately, you outline very accurately the two clinical criteria, because there's a wide variability in response to this. So ultimately, it's your personal individualized response that counts and the simplest way is to measure. People probably wondering how you measured a pound or two. Well, it's pretty simple actually. All you do is measure your naked weight before you go into the sauna and measure the naked weight after you get out of sauna. Then the difference is what you lost is water.

Brian Richards:

Yep. It's a very simple gauge that anyone can do at home. They don't need a lab or a clinic.

Dr. Joseph Mercola:

Well, you need a lab. You need a scale, an accurate scale.

Brian Richards:

You need a scale, but the presume, and I'm not a health care provider. That's what we have you for and others out there in the industry. But for me, I like to know that what I'm doing works.

Dr. Joseph Mercola:

Yes. Yes.

Brian Richards:

I like to have the tools to do it myself. So, measuring the weight loss and then measuring the core body temperature using different thermometer are out there. There's definitely variability between the armpit and the mouth temperature and infrared thermometers versus others. But you get a sense of elevated core temperature as you continue to measure this and gauge your sauna sessions as you start using sauna if you're new to sauna. You'll see that when you get about a 3-degree temperature increase, that's when the body begins to sweat strongly.

Brian Richards:

Then if you can kind of, and again, subjectively and cautiously watching yourself, if you can reach that point of subjective of exhaustion, what is this refer to as the dynorphin response where you kind of feel uncomfortable, that's actually what you kind of want to go for. Because that is when you've kind of maxed out your benefits of this hormetic stress therapy and you haven't taken it too far and you get the endorphin benefits afterwards and all the benefits you get.

Brian Richards:

It can be if you're well-acclimated to the sauna, that will take you longer to get there. But if you are dealing with health conditions and maybe neurodegenerative issues, I have some customers, Dr. Mercola, who start out with two bulbs. They're only using two bulbs and they're only sitting there for five or 10 minutes. They've been contraindicated to get heat exposure to their head, initially. They may take six months to build up to using the sauna or more even as using the sauna as you and I would use the sauna.

Dr. Joseph Mercola:

Yeah, there's nothing wrong with that. It is better safe than sorry. Go slowly if you need to. There's not anything wrong with that process.

Brian Richards:

Yeah. Yeah, you can measure yourself and then you know if you're getting the sweat response and you're getting the elevated core body temperature, you've had a good solid sauna session. You know that if you just do that one to four times a week, you're going to get these benefits that you read about all that everybody's talking about in the literature. Of course, you can do lab testing to further buttress your appreciation of your results. I don't know what you recommend. What kind of profiles you recommend?

Dr. Joseph Mercola:

It probably isn't the most accurate because it's blood levels, but the Genova Diagnostics has a test called NutrEval that I'm particularly fond of. It's not a cheap test, but it provides so much benefits. It actually shows you your linoleic acid, too, content. But when I had mine done recently, it rates it subjectively from a zero to a 10. There was a zero and the health care practitioner that was doing the test for me said she never saw a zero before. I got the first zero. So, it measures mercury, arsenic, lead and cadmium levels.

Dr. Joseph Mercola:

So anyway, because of the criticisms of the temperature being insufficient, you were kind enough to, not acknowledge, but consent to creating an advanced type of sauna that has two sets of bulbs. Two, basically, four panels bulbs that I'm using in my existing sauna now. Right before I went on, you talked about a new panel you're going to resurrect. It has three bulbs, which essentially allows it to be used in almost any home circuit because it's under 15 amps. But I did notice a big difference when I do it. That's actually my preference.

Dr. Joseph Mercola:

In my mind, after you're sharing all this, it's pretty clear that the vast majority of people may only need four bulbs. You could do an eight-bulb system yet you don't and you still continue to use the four. You just need to be in the sauna longer. [crosstalk 00:56:21]-

Brian Richards:

You just stay in there longer.

Dr. Joseph Mercola:

Downside. You're getting more photobiomodulation benefit. Now, admittedly, there's a biphasic response and you can overdo the infrared exposure, right?

Brian Richards:

But I personally live in that modern lifestyle where I don't get as much sun as you. I'm working a lot indoors in the shop here. Just a lot of indoor activity. I don't have an ideal light diet with regard to daily morning and evening sun exposure. So, for me, it's crucial that the photobiomodulation that I get in the sauna indoors-

Dr. Joseph Mercola:

I get it. Much different than much of your customer base. So I think that you can make a pretty strong argument that a four bulb system is all that's needed, but if you really want to go the full monty, I think it's like seven- or eight-bulb system will really get the temperature up. I'm wondering, you had mentioned your temperature goes up 3 degrees, what's the absolute value? Because I think mine goes up 4, or 5 degrees. Typically close to 5 because I'm typically coming in the high 102s and [crosstalk 00:57:17]-

Brian Richards:

Yeah. It just depends on how long I stay in. I usually get 3 degree increase after about 16 or 18 minutes, but by the time I'm done, I'm getting off to over 4 degrees, sometimes 5.

Dr. Joseph Mercola:

What's your final temperatures you're coming out with? You're doing oral, I would assume, right?

Brian Richards:

Yeah. Oral. I've tried those infrared thermometers on the head. They seem unreliable. I don't know. I just think they're [crosstalk 00:57:44]-

Dr. Joseph Mercola:

Infrared temperatures sensor are great, but not really for taking your body temperature is my experience. I agree.

Brian Richards:

But I usually get over 102 degrees. Somewhere over 102, which is about, for me is about four-

Dr. Joseph Mercola:

I don't think you want to go over 103. Occasionally, will hit the low 103s, but typically-

Brian Richards:

It's a matter of discipline and acclimation. In the beginning you don't want to do that. You don't want to overdo it. That's why I recommend everybody just go with what we do now where our four-bulb system-

Dr. Joseph Mercola:

Yeah, yeah.

Brian Richards:

-and you build up and you acclimate. Then you start to – that has a positive influence on the other areas of your life and you correct your diet and you do these other things. You slowly get to a point where, “Yeah, I can stay in longer now, I can handle more.” That's great.

Brian Richards:

But I would urge everybody to just take a really precautionary prudent approach and start out with that. That's why I've always offered a long trial for our product. For some people who have health conditions or neurodegenerative issues, they may take a long time to appreciate, “Wow, wow.” A month or two even to appreciate. Other people who are maybe young are physically fit, do a lot of exercise or healthy lifestyle. They'll be able to handle more quickly, but eventually those who reach a level of like you have, where you're a super healthy guy, you're working out every day.

Brian Richards:

You're used sauna for years. You can potentially increase the number of bulbs. That's why, like you mentioned, we're resurrecting. We're bringing it out of the closet. The very first SaunaSpace panel was a three-bulb panel that we offered back in 2015, I think, or 2016. So we're bringing that back into the fore and we'll be offering that starting, I think next month, this summer. So, summer 2022.

Dr. Joseph Mercola:

Yeah.

Brian Richards:

It's a great solution for the, I would argue the minority of people who reach that level of optimal health that they can handle more and they can add in a three-bulb.

Brian Richards:

The core bulb is, or the core panel is four bulbs. That's a thousand watts plus three more bulbs, 1,750 Watts, which is about 14 and a half amps. It's just under the 15-amp threshold that is the standard household breaker you have in all breakers of the home in American households is 15 amps. So, the seven-bulb system can be kind of plugged in anywhere more or less in any standard circuit. You could potentially use an eight-bulb system, which is what you have, but it requires a 20-amp dedicated circuit. That's not so common throughout homes. You see that in kitchens and baths.

Dr. Joseph Mercola:

Yeah, but it's easy to swap out.

Brian Richards:

You can do that. You can swap it out and you can potentially have that. But again, at the same time, it's also something that you can achieve through just staying in a little longer.

Dr. Joseph Mercola:

Yeah, I get it. Right. You could do it like you personally do, and you can easily put an eight-bulb system, but you chose not to for the reasons you explained. That's a pretty valid argument. So, I'm confident that many people watching this have said, "Oh, darn, you make such a compelling argument for the near-infrared sauna, but I've got a far-infrared sauna." Well, nothing to worry about, because all you have to do, and I want your comments on this, for almost any far-infrared sauna is take out the bench. Because you're going to have to do that because there's not enough room there to leave the bench in. Attach some hooks to one of the walls and you could hang one or even two panels on there. You've got a sauna. So, just literally for the price of a panel, nothing more.

Brian Richards:

Yeah. That's absolutely possible. So, our panels have a really convenient handle on the back of them that can allow the panel to be hung on the wall. So, it's secure and safe and it's fixed in place, and they can do this, really, in any enclosure. So most commonly people will have a far-infrared sauna. They want to upgrade to near-infrared technology, they can do exactly what you said with one panel or even two panels. Again, with caution, as they get to that point over time.

Brian Richards:

But you can also do that in any enclosed space. In a small closet, we offer a shower conversion kit. It really doesn't matter what the enclosure is. It is just a space that needs to be enclosed. So, you can really do this in a wide variety of enclosed spaces and the smaller, the better, as long as it's big enough to allow for the 2-foot clearance from the bulbs and ideally the ability to rotate. That's why it's really nice to take the bench out in the standard far-infrared sauna and either get one of our stools or purchase a seat of your own, and do the near-infrared style sauna protocol, which involves – the traditional protocol is a quarter turn rotation about every five minutes. I know you've just been kind of rotating front to back in your sauna.

Dr. Joseph Mercola:

Well, it is a derivative of yours and it occurred to me because if you're sitting down, you are clearly not hitting some of the largest muscle groups of your body. So, I just face the sauna initially, and then sitting down, then I turn my back to the sauna sitting down. Then I rotate again, but I get off the stool and stand up. Now I have an eight-bulb panel system. So, standing up literally exposes almost my whole body to that. Whereas the four-bulb system, it wouldn't, but still you're going to get enough reflection and stuff. So anyway, when you stand up you hit your quads initially and when you turn around your hamstrings. Those are huge muscle groups. As I said, it's two of the biggest muscle groups in your body. So, to me, that works well.

Dr. Joseph Mercola:

For some reason, I'm more sensitive to the back of my body to the heat and I don't know the reason for that is. Maybe because the current enclosure I have is not – I'm a little bit further away when I'm in the front where I'm in the back, I'm six-foot tall. So, I have to bend my head to fit into the sauna. So, I'm a little bit closer to the bulbs. So, when that happens, I get too hot I just rotate and then I get somewhat of a side exposure.

Brian Richards:

Yeah. Then it's what you said before how it's such a directional radiant heat that the front heats up and the back is not being directly heated. When you rotate in a near-infrared sauna, sort of you're giving the side that was just heated a chance to rest a little bit. Then the blood starts pooling to the new side that has the focus of the heat and the bulbs. You get a more efficient, vigorous heating the torso in this blood-shunting effect that goes on through some type of rotation. But also, you're not overexposing kind of any side. You get a side a chance to rest. So, another way to just make the exotic experience more tolerable is through rotation.

Brian Richards:

So, you can do rotation or not, but yeah, you could take a panel and basically convert and upgrade any small enclosed space that's more or less a volume of 70 cubic feet or so. What you see in a far-infrared sauna, a cabinet style enclosure, and even built in saunas as well. Some homes have custom built-in saunas. In our product, you can also add in one of our single-bulb units, the Photon, at the bottom. That's typically recommended for people who have edema, or problems in their lower extremities. They can get direct photobiomodulation onto their foot or their leg, but that also increases the heat somewhat as well, especially down low.

Brian Richards:

So, these are all ways that you can upgrade and incorporate near-infrared-style sauna technology into your life, whatever you have. Whether you have a large home or a tiny little apartment, or just the only thing you have is a little closet in your stairwell. We have many customers who are making that work with our panels.

Dr. Joseph Mercola:

Yeah. It's got to be enough. I think the dimensions are, well, 6-foot tall. I think it's 60 inches from the back wall where the panels are held to the door. Should be about 60 inches.

Brian Richards:

Our panels are about 9 inches deep plus 2 feet of clearance from the chest to the panel. So, you need something that's at least 4 feet deep at the minimum.

Dr. Joseph Mercola:

Yeah, 60 inches would be a lot more comfortable.

Brian Richards:

Sixty would be probably-

Dr. Joseph Mercola:

Yeah. This way you can move back a little bit, because it's shocking what literally a few inches will do. So, you can really modulate and titrate the dosages you're getting.

Brian Richards:

But again, it's a protocol that dates back over a hundred years.

Dr. Joseph Mercola:

Yeah, a hundred years.

Brian Richards:

So, it's a very safe, people have been doing this for a long time. It's a very safe way to do sauna to heat the body. Now, as we've gone over today, the photobiomodulation benefits can't be underestimated.

Dr. Joseph Mercola:

Yeah. There's such a strong argument to support using this type of sauna, but one of the final criticisms that I think we've just literally obliterated was the cost of your sauna. Yeah, the price of the EMF-free Faraday cage sauna is a bit high, but if you just go and purchase the panels, you are significantly less than any first, but any far-infrared sauna-

Brian Richards:

The big cabinet style saunas can be spendy, but they're also kind of cumbersome. Again, back to the average quotidian sauna user or the sauna enthusiast is not one who's in the best of health. They're looking for the sauna for solutions. So, they don't necessarily want this big 500-pound construction that they need to set up themselves. They want something that is more manageable. It's however you want to start, you can start. You don't even need a – initially, if you want to try out the sauna stuff, you could literally heat up the water in your bathtub as hot as possible and get in there to appreciate, "Hey, actually sweating and heat, this is interesting. This is making me feel good." Most people already have a far-infrared sauna who are sauna enthusiasts out there. You can just get one of our four-bulb panels to upgrade it-

Dr. Joseph Mercola:

Yeah.

Dr. Brian Richards

-and you're done and you're good.

Brian Richards:

Certainly, if you want more portability and you want our design, you can upgrade to that later. You can even potentially add in a three-bulb unit if you reach your level of discipline and of good health. All that matters is you do something. You take action now to start on that journey of sweating, because for me, that was the most impressive thing. Also, in the photo biomodulation studies, this is a nutrient for our bodies and for our lives. We need this on a frequent basis. It's not a pill. It's not something you take once. It's not a surgery. It's something that you need to figure out how to incorporate into your life on again, a weekly basis.

Brian Richards:

So, using near-infrared light to heat the body is the most efficient quickest way to get her done and get that sweat response without spending an hour and a half on your therapy. Nobody has any time for anything. Also, yeah, cost-wise, a panel compared to some of these built in saunas or these very large cabinet saunas it's a lot more accessible for people.

Dr. Joseph Mercola:

Yeah. Say you use a room in your house, the panel that you offer, it is the most extraordinary cost value proposition. Because literally it's hard to imagine that not lasting for decades, probably the rest of your life. The rest of your life, and you can move every year.

Brian Richards:

It's built to last. We've got customers from five years ago who still are using their panels. Even the bulbs. People ask, "Well, what about these bulbs? Are they going to wear out?" These bulbs are actually rated for 5,000 hours. So that's like even before we came out with my own thermal light bulb that it took me many years to develop, I still have customers who I ship them their original panels, Dr. Mercola, with heat lamps, standard heat lamps. They're still using them six, seven years later. So, it's a replaceable product, but it does last a long time. You take care of it, it'll pretty much lasts forever. It's a one-time lifetime [crosstalk 01:10:32]-

Dr. Joseph Mercola:

At least a lifetime. It'll last a lifetime. They're very few things last [crosstalk 01:10:35].

Brian Richards:

It'll last you your health span.

Dr. Joseph Mercola:

Yeah. Yeah. Interestingly, that health span is going to be considerably increased if you're diligently and regularly using this. It's just a caution, final caution on this is that more is not

necessarily better. I've made that mistake. I was doing sauna every day. Then I realized it's probably not the greatest strategy, because it's just too much. You don't want to exercise every day. You want to take some time off, but with sauna, you're losing these toxins that are clearly coming out through your sweat. But you can also lose beneficial minerals and electrolytes. So, one of the things that – there's two additions that I recommend in sauna use.

Dr. Joseph Mercola:

One is we actually came out with an electrolyte pack, powder pack, and I used two of those, put them in a quart of water. I add a little glycine, a little monk fruit. Usually I'm doing this before workouts, or I do a workout before. So, I use a little hydroxymethylbutyrate. I drink that quart about – I try to finish it at least a half hour before, maybe an hour before I do the sauna. So, it has enough time for the water to get into my cells.

Dr. Joseph Mercola:

Then the other thing I use, and I want you to talk about that. The electrolytes and the minerals and the frequency, but then also is the aspect of protecting your head, which you referenced earlier. You don't really want it to get too hot. So, I went to Amazon, and I found a little cap. It's a wraparound piece of a device that Velcro to the top of your head. You put in the freezer and it's got these little gel packs in there that freezes up. So, it really keeps your head cool when you're in sauna.

Brian Richards:

Yeah. As far as the latter half of your comment about the head, yes, we want to be careful not to overheat the head, but we want heat-shock protein response, and we want photobiomodulation there.

Dr. Joseph Mercola:

Yeah. So, the first five minutes, I put it on.

Brian Richards:

Especially that's another precaution to have when you have a super sauna, like a seven-bulb style is to be very careful with the head. One solution is to – our panels have multiple switches. So, one solution is to turn off the switches that are directly aligned with the head to reduce the amount of heat there. You could also cool it off though, like you're saying with a cold pack or something, but also the single-lamp therapy that a lot of people do is a localized PBM and heat therapy that using our single-bulb product. It's only recommended to use it on the head 10 minutes per hour.

Brian Richards:

So that's a limitation that you don't have really on the rest of the body. If you're doing your foot or your gut or other areas, you put one bulb 18 to 30 inches from the naked flesh, and you can keep it on there for a half an hour, or more or less, but on the head or the throat, we're very careful to limit our exposure. So, it's something where, again, when you take a precautionary approach and a slow, methodical approach, you know what you can handle and you don't overdo it. But yeah, regarding the former, not only are you losing electrolytes, basic sodium chloride,

and other potassium, other basics, you're also – when you pull these toxins out of your cells, you need to replace them with the healthy minerals that were supposed to be there in the first place. Like the cadmium sits in the DNA, and it takes the place of zinc in the zinc finger epigenetic structure.

Brian Richards:

So, when we lose that cadmium that's just one of a million examples of where you need to replace that with a healthy mineral. So, it also argues for having this be a part of a healthy lifestyle, which includes food is medicine, a real healthy diet, but also, yeah, supplementing somehow with minerals and electrolytes can be quite beneficial. Most sauna enthusiasts really recommend that. So, you got to be careful with that. That's another reason to go slow and safe and prudent. But one other thing I would mention, another reason to be slow and safe and prudent in all this is everybody's different. You have what are called detox reactions.

Brian Richards:

So some people call them healing reactions. In the world of addiction, it's called a detox reaction. You get withdrawals. Specifically, you experience the symptoms of a poison or a toxin as it's being detoxed. That's something where you don't want to overwhelm your organs of elimination. You want to activate the skin as the most powerful elimination organ. It's one of the three systems we don't use. We urinate, we defecate every day, but we don't, unfortunately in the modern lifestyle, we don't perspire every day. So, we want to activate the skin, but just like with the light, it's hormetic stress therapy, you don't want to overdo it because it takes the body time to correct itself. It takes time.

Brian Richards:

If you do overdo, you can have a healing detox reaction where you may get a headache. You may get really fatigue all of a sudden. Some people experience just the symptoms-related toxins. There's a thousand different healing reactions you can have. To make those speed bumps in the journey as gentle as possible, again, just go slow with things.

Dr. Joseph Mercola:

Okay, good. Then your light bulb on the right side of your body, the photon beam is a reminder that that is a strategy that I've also incorporated into my personal workspace. After, I think it was Brian Hoyer or you helped me understand that most every window in your home has filters in it that essentially prevents the majority, not all of it, but the majority of the near infrared coming into your house. So, it looks like you have full spectrum light coming through windows, but you don't, you don't. You got visible light coming through. You're blocking the near-infrared, and you're blocking some of the UV, too.

Dr. Joseph Mercola:

But when you put that bulb on, it does amazing things. So, I must have that bulb on more than eight hours a day, maybe 10 or 12 hours a day when I'm in my office. So, when I'm walking on the beach obviously it's not on, but when I'm doing an interview in my studio here it's not on, but most of the time it is on. So just a really good way to increase your – I want to say digestion, but

absorption would be much better. Absorption of near-infrared is really a food that your body requires or a nutrient might be more accurate.

Brian Richards:

It is. To be clear, I'm not doing this in a targeted fashion. It's not like pointing directly at me. It's just in the general area. It does a couple of things. It does essentially what you said. It replaces the missing component, this huge near-infrared component that if we were just outside, it would be in our light experience.

Dr. Joseph Mercola:

You wouldn't need it if you're outside.

Brian Richards:

We wouldn't need it, but since we're indoors, we have the low E glass on the windows. Also, indoors, we have a lot of junk light. We have a lot of blue, LED and fluorescent light that has a flickering effect. That's stressful to the nervous system. Blue light causes free radical formation. You've covered that in-depth, even in the mainstream now they have blue light blockers and other things. Because it's referred to as high-energy visible light. It's damaging to us. Since there's no near infrared coming from these LED and fluorescent light sources, unlike the sun, it doesn't have that healing antioxidant building component to it.

Brian Richards:

So, putting this just in your interior space doesn't just replace the near infrared. It also mitigates the perceived exposure to the flickering light, the blue light. You can measure this with a spectrometer or a flickering light meter. You can see how just having a photon in this area next to you reduces the amount of blue light and flickering light that your body perceives and long story short, if you work at a computer, this thing is lovely. Just because computer work is so stressful and these are LED screens and really not ideal to live this way, but we have to.

Dr. Joseph Mercola:

Well, in my case I was really careful and purchased a monitor that was flicker-free and essentially I have a filter on it. So, there's virtually no blue light coming out or very, very little. But you're right, for most environments, that's not the case. It's interesting because you can turn that light on, the photon bulb that you have, 250-watt, near-infrared bulb and you can have the flicker monitor. If you have a monitor that measures really high, and usually there's an audible signal to it also. With a bulb off, it'll be blaring and beeping really rapidly.

Dr. Joseph Mercola:

Then you turn the bulb on and virtually disappear. So, it seems to mask the flicker issues pretty well. But just general, I think that's a minor benefit because you can mitigate, as I said, by purchasing the right type of monitor and essentially, the lights are rarely ever on in my office. Almost never. So, it's not an issue, but supplying it as a nutrient that your body requires because you're living indoors most of your life is a good strategy.

Brian Richards:

It is. We talked a lot about science and nutrients and all the cellular in-the-weeds-type of talk. But if you just imagine yourself next to the campfire. You imagine yourself next to the fireplace, that's what it feels like. The feeling you're getting there that you can't quite put your finger on, but it's lovely, is the significant amount of near-infrared absorption that you're getting. If you don't have something like this anymore, or you're not living with a lot of sun or like our ancestors did, you're missing that. It doesn't just affect the health of your cells. It definitely affects your brain and your mood and your outlook and just feeling good.

Dr. Joseph Mercola:

Yeah. So, as I mentioned earlier as we started this conversation, I'm a huge, huge fan of sauna and have been for two decades. But recent appreciation just absolutely confirms how much more important it was than I ever thought possible. It's primarily for the near-infrared. I've learned in this interview that your bulbs were 40%. I thought they were 15%, but it's 40% near-infrared. So, in my mind, this is one of the most important bio hacks or lifestyle. I would classify this as a relatively advanced lifestyle strategy. Certainly, just getting out the sun is more important if you have a choice or eating the right foods. But clearly one, you want to move towards adopting relatively early on.

Dr. Joseph Mercola:

Investment is not that significant. Yes, it's high for many people, but again, remember something that's going to last you pretty much the rest of your life. This is not something that you have to replace. These panels they're going to last for decades. The bulbs probably last 50,000 hours.

Brian Richards:

Five thousand hours.

Dr. Joseph Mercola:

It was 5,000. Five thousand hours is a lot.

Brian Richards:

It's years, it's years.

Dr. Joseph Mercola:

It's years. It's many years. So even then, you're just replacing a bulb. That would be many years of use and I've yet to replace a bulb actually. Other than ones that exploded or got broke because I dropped some sweat on them accidentally, which can happen. But with the shields you got around, it's pretty safe, because these bulbs get really hot and you can burn yourself if you're not careful. So, you have to be careful here or cautious.

Brian Richards:

Yeah. That's why we've developed this cage, this stainless cage.

Dr. Joseph Mercola:

Yeah. I like it so much better than the first-

Brian Richards:

No, this has been running this whole time. So, it's a very safe-

Dr. Joseph Mercola:

Wow. I didn't notice that. So, you could actually touch the cage?

Brian Richards:

Yeah. I wouldn't recommend that, but the important thing is to not touch the bulb itself.

Dr. Joseph Mercola:

Yeah. Because the older ones you had they had the thicker bars and those did get hot. You could burn yourself on those.

Brian Richards:

Yeah. The Doctor Kellogg saunas didn't have any protection at all. They were just the bulb. You had to keep your body close, but the technology has advanced in the last hundred years, the safe-use technology.

Dr. Joseph Mercola:

Well, I'm really deeply appreciative and grateful for your commitment to providing this as a resource and strategy that pretty much is available to almost anyone. Because it's such a radically foundational, important upgrade to your health that will really help in the long run, especially in these neurodegenerative diseases. Alzheimer's isn't pretty. It's nice to feel good and healthy and have a lot of energy, but when you lose your mind, it's definitely [crosstalk 01:23:21]-

Brian Richards:

There's really disturbing incidents of what's called early-onset Alzheimer's nowadays.

Dr. Joseph Mercola:

Below the age of 60 or 50.

Brian Richards:

But disturbingly common now. That's not the normal human loss.

Dr. Joseph Mercola:

No.

Brian Richards:

It's not our condition. That's a weird, modern abnormality.

Dr. Joseph Mercola:

Yeah. So modern society offers many advantages, but you've got to be careful. There's a lot of exchanges for convenience for health. So, this is one of the ways you can help remediate against that. Screening all the toxins, getting the massive dose of near-infrared and creating heat-shock proteins, bing, bing, bing. So, three wins. All right. Anything else you want to add before we go?

Brian Richards:

That's it. If you want to learn more, you can go to my website Sauna.Space. I have a lot of-

Dr. Joseph Mercola:

I thought it was SaunaSpace.com.

Brian Richards:

They go to the same place. It's SaunaSpace.com. You can just search SaunaSpace. But for those who want to dive deep into the literature, we have a really nice Learn section to explain our light technology and our spectrum and the EMF stuff if you're interested in that. But if you go to the bottom of the website, you can click on my Research archive, and I've curated a lot of literature. It's a growing database where I've sorted it by topic. So, if you're interested in the skin or the eyes or the sauna or brain health and other stuff, you can click on that topic and you can see a growing body of research using photobiomodulation and sauna to improve health outcomes. So that's a great resource for people, and that's all on Sauna.Space.

Dr. Joseph Mercola:

All right. Well, thanks for everything. Amazing resource and tool you've put together and made available for everyone to access, so congratulations on doing such a great job, and thanks for everything you're doing.

Brian Richards:

Well, thank you for having me, Dr. Mercola, really appreciate it.