

**EPISODE 271**

[INTRODUCTION]

**[00:00:19] AVH:** Hey everybody, welcome to Paleo Magazine Radio. I'm your host Ashleigh Van Houten and today, we are speaking with the founder of Joovv. His name's Scott Nelson. Joovv is a company offering red light therapy and infra-red LED light therapy and in products that you can buy and have in your home and use at home. What he does for me is he finally clears up in some very plain language, the differences between near and far infrared light, you probably heard these words being used a lot and maybe like me, you're a little bit confused as to what exactly they are, the differences, what they're doing.

We talk about near and far infrared light, we talk about red light therapy, we talk about the differences between light and heat therapy because these are all different actual tools. Some of them kind of overlap and some may be better for others than others in treating specific issues and these issues range from skin health to muscle recovery to chronic pain, jet lag, even depression. If you've considered maybe getting an infrared light sauna or getting some sort of light therapy portable device that you've heard about.

Definitely listen to this episode first because it's going to clear up a lot of things for you and help you make some decisions. There seems to be a lot of pretty conclusive research out there which Scott is going to touch on in the interview that shows the benefits of light therapy for a number of issues and it could be basically just another helpful tool to add to your toolbox if you have the means or the ability to sort of add this into your routine.

In addition of course to these other tried and true methods like good sleep, food and exercise. Those fun unsexy tools that we all kind of want to avoid but they're the important ones. Anyway, before we get into this very informative and helpful interview, I got to tell you about our show sponsor Paleo Powder.

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If you are somebody who really needs to pay attention to the ingredients and the quality of the ingredients you're putting into your food like for example, if you follow an autoimmune protocol, diet, if you have autoimmune issues, or if you just like to have tasty spices to literally spice up your healthy meals, things as seemingly safe or innocuous as spice can actually have a really big impact if you're sensitive so this company, Paleo Powder Seasoning, they're really taking the quality of their spices up a notch.

They have a number of options including a FOD map friendly spice, they've got one that's AIP friendly and they have a bunch of organic blends, my favorite is just their original, it's called Paleo Powder Pink and it's a blend of spices with pink Himalayan sea salt and it's just one of those perfect sort of every day spices you can put on anything you're making, eggs or chicken or beef or whatever you're doing. It tastes good on it.

Anyway, I love this company, they're doing really good work, they're really paying attention and being transparent about what they're doing and what they're offering to people and I'm pumped that they're sponsoring us so they're giving us a very generous discount for you guys. 25% off your entire order if you use the code 'paleo mag'. Go to [paleopowderseasoning.com](http://paleopowderseasoning.com). Pick up some spices, let me know what you think if you enjoy them and all of this is in our show notes as well so you can go and refer back to that if you want to. Buy yourself some healthy spices or maybe get some for a friend or a loved one.

That's it, now please enjoy my interview with Scott Nelson, the cofounder of Joovv.

[INTERVIEW]

**[0:03:32.2] AVH:** All right Scott, welcome to the podcast, thanks for being here.

**[0:03:35.0] SN:** Thanks for having me on Ashleigh, really looking forward to the discussion.

**[0:03:38.0] AVH:** Yeah, before we get into the weeds and I ask any specific questions that I have for you. I'd love if you could just kind of start by introducing yourself to the listeners and kind of tell us who you are and how you came to Joovv?

**[0:03:51.1] SN:** Sure. My name is Scott and I'm one of the cofounders of Joovv and we manufacture and sell red light therapy devices, sort of we're most probably known for full bringing full body light therapy to the market and you know, I'll give you a quick overview of my background and then we can certainly go deeper if you want. I've spent most of my professional career in the traditional world of medtech, with companies like Boston Scientific, Covidien, Medtronic.

To be a little bit more specific, my wheelhouse was primarily before Joovv anyway, my wheelhouse was primarily the peripheral vascular space so the products that I helped commercialize were things like Venus ablation catheters, atherectomy catheters, arterial balloons and stents. Those types of products. Completely different from light therapy. Nonetheless, still kind of in the world of like kind of healthcare if you will but definitely more traditional for sure.

Joovv obviously is completely different in most regards but at the same time, our products are still considered class two medical devices so it's kind of an interesting ride of that blend of like consumer driven healthcare with the traditional regulatory constraints around certain products but nonetheless, that's kind of a little bit more about me and we can certainly go deeper if you want.

**[0:04:59.6] AVH:** Okay, Scott, first, I have to say that you asked me very generously offline how technical you could get and I said, not very and in your first sentence, you said so many words that I don't understand. But we will double back to this but let me ask a couple of quick questions. How long has Joovv been a company?

**[0:05:18.9] SN:** We started our RND efforts back in early 2015 and launched our first product in February of 2016. The reason I kind of mentioned my medtech background actually, to be quite honest is, most people, when they hear about red light therapy, just like I did when I first learned about it, they're very cynical. There's no way that bright red lights can lead to all of these different health benefits.

The reason I mentioned my medtech background is because I'm – I was very skeptical myself before I kind of falling into this space. If you're new to light therapy and kind of have a part of your eyebrow is raised and you're kind of thinking, this is kind of bogus stuff.

I would just encourage you to listen in and learn a little bit more about just the impact that that light, especially red and infrared light can have on overall health.

**[0:06:07.2] AVH:** I appreciate that you actually bring that up because I do think that in the world, in the industry in which we both work in different capacities is, there is a lot of sort of the less sexy like established, this is what's going to make you healthy in terms of lifestyle like sleep and exercise and nutrition and then there's some of the stuff that people consider more peripherally to be kind of either woo-woo or not quite figured out yet or they're like the little things that you do when everything else is sort of figured out.

I appreciate that you kind of touch on that because I do think there are people who are still cynical about it and that's why we need to kind of get into more of I guess, the science and research around this stuff but I have another not science question first which is, what is the word Joovv, what does it mean, why is it spelled that way, what does it mean?

**[0:06:54.3] SN:** Yeah, it's a question that often comes up. Joovv is just a play on the word rejuvenate. Because that's in essence what light is specifically red and near infrared light is doing at a cellular level. It's sort of rejuvenating our cells to produce more energy, it's just to kind of a short play on that and that was kind of – dates back to kind of 2015, we were looking for a name and wanted a .com and those are just hard to come by and so it was kind of –

What ended up, what we think anyway was a kind of a good, decent option and so we stuck with it. Yeah, kind of what's interesting is you know, for those kind of entrepreneurial folks, kind of going back to those times and kind of early to mid-2015, we didn't intend to start a company around my therapy. This sort of came about because my wife and then her sister purchased a red light therapy package at a local spa in Minneapolis, that's where we started the company and that's where we lived at the time.

They saw really good results going consistently about four to five times a week over the course for about two to three months. Saw really good benefits when it comes to skin health but they just didn't like the idea of having to go to like a commercial facility that often.

They wanted something to ideally use at home and to be more specific, something that you could use to treat your entire body because that's what they were doing at the spa. At the time, there wasn't anything available like that at all, most light therapy products were sort of – the only ones that you could really find were small little handheld devices that were really underpowered.

You'd have to just use them forever, to receive a clinically relevant dose of energy based on the published literature and so that's kind of what started us down this path and led to kind of the formation of a company around this type of product.

**[0:08:32.8] AVH:** That's interesting because I actually had a very similar sort of origin story in terms of my experience with like infrared light. Of course I didn't start a company, you did so congratulations for that but my story was similar, I was going to – I think it was a naturopath clinic and this was around the same time too actually, I think.

They were advertising that they had this infrared sauna and they were explaining why it was different than a regular sauna and I'm like well, it must be fancy because why do you have this one specific sauna at a naturopath clinic when I can just go to the sauna at my gym and sit in there for half an hour and I remember using it. The first time I used it and I sat in there for like – this isn't even light therapy, this is kind of going off on another tangent.

The calm and positive mood benefits that I felt from experiencing some of these stuff was so significant that I'm like, there's definitely more to this and that's how – that's what started me down the road of learning about light therapy and infrared and all of those things.

It's interesting too that your company is quite new by many standards but I feel like it's been around for a while because you guys, you're doing things right, obviously, you must be but you also – I feel like came in at the right time, really recognizing that there was an interest in this and the trend which again, this isn't a new technology necessarily but it's sort of found an audience. I think in the past couple of years in the health world.

Because I feel like you guys are everywhere, right? You guys really are tapping into a need that people are expressing and it's kind of interesting because you've grown a lot in the past few years, right?

**[0:10:05.2] SN:** Yeah, there's no doubt that we've grown pretty rapidly over the past three years or so. To your point about kind of right place, right time, that's sort of like, you know, going back to kind of those early years when we were kind of trying to lay the groundwork for what is Joovv today.

What we noticed is, we noticed a few things. One that really stood out with respect to light therapy is the sheer amount of published literature that speaks to the wide variety of benefits and you know, like I kind of mentioned before, I was super skeptical at first but I just went right to PubMed, you know? With my more traditional medtech background, that's sort of like you know, first steps, is there any science to support any of these claims about light therapy and I was quickly blown away by the sheer amount of it.

What was interesting is that, like on one hand, you have got this all – this published pure literature and that's easily accessible in PubMed and on the flip side, no one's talking about it and the benefits of it. In fact, you know, you really only could find it in red light therapy being utilized on these sort of consistent basis in spas, right? By skin care professionals.

Aestheticians, et cetera, it wasn't really being promoted. We saw like a pretty significant gap that comes to that. Around kind of the educational awareness around the science of light therapy and that's still something that we continue to dedicate a lot of resources towards is just you know, raising more awareness for what we consider kind of the legitimate science of light therapy.

In addition to that, we saw kind of a gap when it comes to the products available in the market place too and I kind of touched on this a little bit earlier in the sense that if you did a quick search on Amazon back in 2015 and a lot of these – there's still a lot of these products that exist today, you really only can find these small handheld devices like I mentioned and that's just –

those can work, certainly, for targeted areas but this types of healthy wavelengths of light which I think we'll get into a little bit more detail in a second.

They're beneficial across your entire body and so, our hypothesis was, there's the science is there to showcase this and it's clearly evident that these types of wavelengths are full body coverage would be ideal. Why not create a product that could treat very large portions of your body and so that's sort of was our mission from the outset.

**[0:12:14.4] AVH:** Okay. I would like you to get into literally just how red light therapy works but first, because you have mentioned the difference between like a full body therapy versus targeted treatment, you guys do offer both, you offer like smaller products that are for like specific targeted areas or things that you want to address. If the full body therapy in general, generally speaking is more effective and better, right, why would someone choose the targeted products or approach, is that simply sort of like a cost thing?

**[0:12:48.6] SN:** Yeah, it typically comes down to probably two things, one is cost, for sure, I mean, the larger devices are certainly more expensive but the second issue is, there are some nice benefits when it comes to targeted treatment, the portability, the convenience, they're a lot easier to use like as an example, that's actually our most recent product launch that we rolled out in gosh, when was it? February of this year, February of 2019 was the – we call it the Joovv Go, but it is a small handheld device that's completely wireless and rechargeable.

You can theoretically, you know when you're at night, if you're watching a Netflix show or something like that and you're trying to treat a sore knee or a sore ankle, maybe a sore back or something like that. You can use it in those use cases where a full body device with our products anyway, you're not going to really use them while you're –

You kind of almost have to have like a mostly dedicated session where you're using those full body type of applications. Does that kind of makes sense?

**[0:13:41.9] AVH:** Yeah, I mean, to put it in a way that I mean, this isn't like an ideal marketing way to say it but I think that the smaller targeted thing is it's more convenient, it's easier to kind of bring with you and use it and it's sort of like a better than nothing. If it's between not using any

red light therapy at all, because you're traveling or you're busy or you're doing something else and using this smaller targeted thing, the smaller targeted option is better.

It's still part of your process and you know, health treatment, you know? When you can, using the full body treatment is going to just be better and more effective, right?

**[0:14:16.0] SN:** You got it, that's a great summary and you know, with a smaller handheld device, especially if they're wireless or rechargeable like ours is. It's very easy to travel with as well. If you do happen to travel a fair amount and still want to get your red light therapy, it's a great way to do that but yeah, your summary was spot on.

**[0:14:35.1] AVH:** Okay, cool. All right. Now, we don't have to – I'm sure you could talk about this all day. You might want to give us sort of the longer elevator pitch but if you could just kind of tell us in layman's terms, how is red light therapy working in our bodies, what is it doing?

**[0:14:51.6] SN:** Yeah. I usually like to start out with the analogy of comparing light to macro nutrients. Almost everyone, I guarantee, 99% of the people that are going to listen to this conversation are familiar with how our bodies metabolize the basic macro nutrients, right? Proteins, fats, carbs, et cetera. That's pretty well understood by most people.

And, I think, to add on to that. Our bodies metabolize these different macro nutrients differently at different times of the day like as an example, if you eat something that's high glycemic at night and spike your insulin levels, that's not really a great recipe for success in terms of overall health.

If you start there, start within that kind of framework, that context, our bodies respond to light in a kind of similar fashion. As an example, most people understand that UV light, UVB light especially. Our bodies are exposed to UVB light, they can produce, we can produce vitamin D which is a great thing.

That's an example of a certain wavelength of light that our bodies almost metabolize and respond to differently. What we're talking about here is red and then near infrared light which is you know, actually light wave lengths that fall within a very narrow window of the entire light

spectrum and these two wavelengths, this very small window of light red and near infrared light, they have a unique ability to help our cells, throughout our entire body, produce more ATP energy.

The mechanism as to kind of how that actually works at the mitochondrial level, there's still some debate about how that – how our bodies are actually doing this. But at the end of the day, our cells are producing more ATP energy which leads to a cascade of really positive effect.

Everything from enhanced gene transcription to a shift in cellular redox as a byproduct, there's a whole host of benefits, everything from better looking skin, younger looking skin, through increased collagen production. Reducing joint pain and inflammation, producing more melatonin for better sleep. Faster muscle recovery, et cetera.

It starts to sound like a late night QBC commercial but the difference here is that all of those benefits are supported by a robust amounts of published peer reviewed literature but it all kind of harkens back to this concept of these very specific wavelengths of light, help the cells in our body, specifically the mitochondria, produce more ATP energy.

**[0:17:11.9] AVH:** Okay. I fear and I hate to say this as a professional interviewer but I fear that this is kind of a dumb question but I'm going to ask it anyway. What is the difference between, because you're talking about near and far infrared light, right? What's the difference between the red light therapy that Joovv offers and like a far infrared sauna that it's like heat, there's no light, there's no light involved, what is the difference?

**[0:17:39.7] SN:** Yup, that's actually not a dumb question, in fact, it's a great question, one that comes up often just because most people are – at least within kind of this fear of like seeking after their health, they're pretty familiar with dry saunas or infrared saunas. We're talking about different frequencies or different wavelengths of light. Going back to the idea that there's different macro nutrients. Proteins, carbs and fats and our bodies respond to those differently, it's the same thing when it comes to light.

Mid and far infrared wavelengths, which are the wavelengths which are the wavelengths that are often, that are produced inside a sauna. Those are great at producing heat, right? That's the

goal of a sauna is to produce heat and our bodies respond to that heat and when you look at the published clinical literature around saunas, most of it is like – most of it speaks to this concept of our bodies are actually, it's almost like taking our bodies to cardiovascular exercise and that's kind of the – a lot of the benefits are derived from that type of effect.

That's why in saunas, the purpose of heating up your core body temperature, that's why mid and far infrared wavelengths are often used. When it comes to light therapy or photo bio modulation which is kind of the technical term for light therapy.

You're actually using a very different wavelengths of light. Near infrared which is a lot different than mid and far but near infrared and then red light, these are different types of wavelengths of light, to almost like different types of macro nutrients so to speak.

Our bodies ourselves actually respond differently to these wavelengths of light. The benefits are different. Red and near infrared light actually help out, like I mentioned earlier, help the mitochondria in our cells produce more ATP energy. You don't get hot, that's not one of the byproducts in using red and near infrared light, but your cells do produce more ATP energy which leads to this whole host of clinically proven benefit from like I mentioned before.

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**[0:19:26.2] AVH:** Loyal listeners, I am interrupting this fantastic interview if I say so myself, to tell you about show sponsor Jones Dairy Farm. They're a family owned business based in Wisconsin, they've been operating for 130 years so they know what they're doing and they're well known for their all natural sausage, dry aged center cut bacon and naturally smoked ham and Canadian bacon.

They're dedicated to super high quality ingredients, the sausages are always made without binders, fillers, gluten, preservatives, MSG, nitrates or nitrites and they use only fresh, never frozen, hormone free pork, chicken and turkey meat from local producers and you can find their products in the freezer section of your grocery store.

Some in the refrigerated isle but you can also learn more about their company, what they offer and check out their special fully paleo certified products at [jonesdairyfarm.com/paleo](http://jonesdairyfarm.com/paleo). I have eaten probably a few of everything that they make and I'm a fan. Check them out and let me know what you think.

[CONTINUED]

**[0:20:29.6] AVH:** Got it, okay. It seems like they're just – they're different wavelengths that produce different results depending on what it is you're looking for because I've read that the infrared, the far infrared sauna, it's as you said, it's kind of inducing the sort of like passive sweating which can have a whole host of health benefits aside from the kind of sweating you'd have when you're like doing a hard workout for example, there's obvious benefits to that but it's just different than what you're getting from this near infrared light that it's just producing different effects.

**[0:20:58.9] SN:** Right. In the infrared spectrum just to you know, go a little bit deeper there, the infrared spectrum is actually very broad. It starts at around kind of the 800 nanometer range, nanometers are kind of the metric that most people refer to when they're measuring light frequencies.

But are light wavelengths I should say. It starts around 800 and it will go out to 20,000. It's actually a very broad window, the infrared window. That's why you know, it's important to kind of understand the differences between something like near infrared which is you know, kind of in that 800 to a thousand nanometer range, versus mid and far which is you know, these wavelengths are much longer.

Our bodies metabolize these wavelengths in very different ways but at a high level, from a 30,000 foot perspective. Saunas like infrared saunas are great, right? There's a lot of clinically proven benefits to saunas. I would argue that light therapy or photo bio modulation, there's a hundred X that the amount of size to support therapy and the wide variety of benefits but both are great, they're just very different in terms of how our bodies respond to these different wavelengths of light.

It's kind of like cardiovascular exercise and weight training. Both are great, probably most people I think would say you probably need both but you typically don't, you're typically not like doing overhead dumbbell raises while you're jogging, right? They're just kind of different, you know what I mean?

**[0:22:18.2] AVH:** Got it, okay that's really helpful. Okay, are all of your products the same using the same wavelengths or are there variations within the products that you guys offer?

**[0:22:28.1] SN:** When it comes to light therapy, I'll answer that, I'll circle back to that question here in a second. The short answer is we do use very specific wavelengths of light. Red light at 660 nanometers and then near infrared light at 850 nanometers.

To kind of answer that in a more holistic fashion, when it comes to light therapy or photo bio modulation, the overwhelming majority of research supports wavelengths of light in between what researchers call the optical or therapeutic window which is a window of light between about 600 nanometers and a thousand nanometers.

That's kind of that red and that near infrared spectrum and to be a little bit more specific, red light in the mid 600 nanometer range, and then near infrared and the mid 800 nanometer range, those are the wavelengths of light that have been proven time and time again over thousands of published peer reviewed studies.

Those wavelengths of light have a very similar mechanism of action at a cellular level, they're really the only differences between red and near infrared light is the depth of penetration. Red light actually, most of that energy is absorbed in the superficial layers of your skin so the dermis and epidermis, that's why red light is typically when you look at a published literature.

Red light is typically used for skin health whereas near infra-red light actually has a unique ability to penetrate further. In fact, near infrared light can penetrate through bone even. When it comes to deeper tissue treatment like joint pain relief, inflammation relief, faster muscle recovery, cognitive function, et cetera, that's near infrared light is typically what you see producing most of those deeper tissue benefits.

In our devices, deliver both. You have the option of using red, near infrared or both wavelengths of light.

**[0:24:10.8] AVH:** Got it, okay, that's really helpful. Okay, why wouldn't you, if you're using this for muscle recovery and also it will make your skin nicer and prettier like why the hell wouldn't you do both, it seems like a no brainer to me.

**[0:24:25.7] SN:** Yeah, there's no doubt and we don't have definitive data on this but you know. More than 95% of our customer base uses both wavelengths at the same time, there's not a whole lot of reasons like you would want to use them, sort of independent of each other.

The only caveat is that that small handheld device that we were discussing earlier, that we call it the Joovv Go which is that wireless and rechargeable device. When it comes to our products anyway, that only comes in red or near infrared. That's really the only time that this type of question comes up. At least with our customer bases, which handheld device should I go with? The one that's all red or the one that's all near infrared and that really kind of just depends on what you're trying to treat.

All red is great for skin health as I kind of pointed out earlier but near infrared does penetrate deeper. If you're looking for kind of those deeper tissue benefits, near infrared is the better way to go. The nice thing about kind of our larger full body systems or devices is that you have the option of using both at the same time.

**[0:25:25.3] AVH:** Got it, okay. Then it would be the near infrared, individual little mini device that Ben Greenfield always talks about using like standing in front of it naked, putting it on his junk while he's travelling and all that stuff. It's probably the near infrared, not the red light one, right?

**[0:25:40.8] SN:** Well, most of the time, he's using our bigger full body systems which – he's using both wavelengths at the same time. Red and near infrared light.

**[0:25:48.7] AVH:** I think he has talked about though, like the one that he brings with him when he travels and stuff and he'll literally just like put it in his lap on the plane and stuff.

**[0:25:57.0] SN:** Yeah. He's got both the red and the near infrared version. I think most of the time, when he travels, when he is using that handheld device. He's using near infrared light because it does penetrate a little bit deeper.

**[0:26:08.0] AVH:** So I know that obviously results and the way people use it is going to be really subjective to the individual and what their goals are and their challenges and also I would imagine that there is a huge variety of results based on the rest of the person's lifestyle too, right? You can't just be like up all night eating Cheetos and think that a red light is going to sort you out of course but in general terms, if we are using for example the red light therapy for skin health.

And that is not just necessarily as you said, building collagen to look prettier and slow skin aging but also people who have maybe like psoriasis or eczema or real skin problems. This has been shown to help it, right?

**[0:26:50.7] SN:** Yeah.

**[0:26:51.3] AVH:** Okay, is there a general protocol? Is there an amount that you need to use it daily, weekly? Can you overdo it? Can you use it too much? How does that work?

**[0:27:01.0] SN:** Yep, so to answer that question and it sure it is possible, it is really hard to overdo light therapy. Probably the best comparison is you know it is really hard to drink too much water. I mean you really have to be drinking a ton of water for you to become unhealthy but to be a little bit more practical, with our devices and really light therapy in general it all comes down to the dosage and so I mentioned this early on when we were chatting about the origin stories of Joovv.

What we've noticed is most devices on the market are really underpowered. In order to receive a clinically relevant dose of energy, you have to use them for really prolonged periods of time. Upwards of 30 to 45 minutes sometimes even over an hour and that is not just practical for most people to use on a daily basis and it is when it comes to light therapy just like eating a healthy diet or working out, consistency is important.

It is the same thing with light and so when it comes to answering that question, how long do I need to use this, everything boils back to the dosage of energy and with our devices we typically recommend about a 10-minute treatment time and in terms of how you use the device it really depends on which one you have. So if you are using something like a targeted treatment device, it literally is taking the little handheld Joovv Go, you know holding it over your knee.

Or whatever area in your body you are trying to treat for about 10 minutes or so in average and that will result in a clinically relevant dose of energy because that small handheld device delivers nearly the same power as our larger full body systems, the same treatment time applies. So as an example, I've got our largest system, the Joovv Elite and the way I use it is I use it in the morning. Every morning I will stand on a vibration plate and then do simple breath work for 10 minutes in front of the big full body system.

At about, you know three to six inches away or something like that from the device and that over the course of about 10 minutes, I am getting with that full body device, I am getting roughly about 200 joules of energy, which is a lot. A very clinically relevant dose of energy in that short 10-minute time and so those are the general treatment recommendations when it comes to our devices and that is based on independent third party testing.

And so, if you are interested in researching or taking your next step in terms – or picking up a light therapy device that is one of the things that you probably want to look for is what is the output from a device like basically how much energy will my body receive in this recommended treatment time and is that based on independent testing and unfortunately here is a lot of light therapy devices that don't. Their products are tested by independent parties.

And so that is just an important question to answer but when it comes to our products specifically, generally speaking we recommend about a 10-minute treatment time once per day. If you are trying to treat something specifically like say you've got a sore back that's been consistent, a chronically sore back, you can treat them multiple times per day. I would argue that you don't really want to extend the treatment time. So instead of going from 10 minutes to 30 minutes, it would be better to probably just do multiple sessions throughout the day. So two to three 10 minute sessions instead of one prolonged session if that makes sense.

**[0:30:16.0] AVH:** Got it, okay that does make sense. I think one of the things and just to play devil's advocate with folks who again are maybe unsure about this stuff or see it as more like sort of woo-woo kind of as oppose to science, I think one of the issues with therapies like this could be that they are it is subtle, it is about consistency, it takes time and it is one of those things where you may – it is not so much in some cases, it is not so much about noticing improvements as it is noticing degradation.

So it's like I feel good but I am feeling better because I am using this or is it just I feel good in general, you know what I mean? Whereas if you maybe stopped doing the therapy you travelled for a couple of weeks or weren't able to use it you might notice that you are feeling worse, right? Is that something – like if you travel or if you are going on vacation or you travel for work and you are not able to do your morning routine for a week or two and say you aren't able to bring your little individual handheld piece with you, are you personally going to notice differences physiologically?

**[0:31:19.5] SN:** I hate to say it depends, but it sort of depends, like if you are in pretty good shape and you're healthy, you're pretty fit you are probably not going to notice dramatic differences when you are not using light therapy for a week or two. The biggest thing you might notice is actually sleep believe it or not especially if you are using some sort of diagnostic tool like an Oura Ring or a whiting's device or something like that where you can actually or hoop band to monitor your sleep.

That is probably the biggest thing you'll notice. Now if you got like a sore joint or something like that and you get a lot of significant pain relief from using a red light therapy device and then that joint becomes inflamed again and you don't have access to red light therapy yeah, you are probably going to notice it physiologically.

**[0:32:01.8] AVH:** Okay, so I am thinking about all the ways that I would want to use this for myself including of course, collagen production. Of course, sleeping better, sleeping is something that I am always struggling with. I've got this lower back thing because I am alive and I am in my 30's it is like a whole thing but if I am using one of your products on my chronically tight sore lower left back, am I going to notice – and again, it depends and individual results vary.

But is this something that you may notice tangible physical relief within one use or is this like if you are using it consistently over a couple of weeks, you are going to notice like you just wake up and your back hurts less. How significant are these improvements when you start using the product?

**[0:32:48.1] SN:** It probably depends on the severity of the pain you're in. We do see anecdotally, we hear from a lot of customers that do suffer from pretty significant pain and they see relief within one to two treatments. If it is something that's – if you are not a fast responder, if you tend to be more of a slow responder which those types I would argue that that is a smaller percentage of people but it may take a little bit longer to see benefits.

When you look at the clinical literature, most categories you'll see benefits within probably the first two weeks of consistent use. The only thing that probably does tend to stand out or is a little bit different is skin health. Most studies around skin health are qualitative in nature but to see significant results in terms of lessening wrinkles, more even skin tone, those kind of things, usually you are going to need anywhere from probably four to eight weeks of consistent use.

Some of that has to do with the fact that we look at ourselves every day in the mirror so it is just hard to notice those subtle differences but you know when it comes to skin health, you are usually probably going to need a little bit more time to see significant differences from using light therapy on a consistent basis but other categories like sleep or joint pain and inflammation etcetera, you will tend to notice pretty significant physiological benefits.

In fact, a lot of the elite athletes that use our devices that is one of the areas that they notice a difference in right away is sleep and a lot of those same athletes that tend to be early adopters when it comes to new therapies like this, they are using certain diagnostic tools like Oura Ring like I mentioned before and they do notice very quantitative differences when they are using light therapy and when they don't when they miss a day or something like that.

**[0:34:24.9] AVH:** Can you talk a little bit about the science of how red light therapy does assist with improving people's sleep because having just come off a couple rough nights myself, I am very interested in this. I know I've read of course, the circadian rhythm of individuals is very

important thing that we need to be paying attention to and one of the health tips that you hear over and over again is for people to go outside first thing in the morning.

Early in the morning and get exposure to sunlight right away because that helps set the rhythm and get your body to understand where you are in the world and that kind of thing but how does using red light therapy helped with people sleep?

**[0:35:03.8] SN:** Yeah, there is two things to consider when it comes to light therapy and sleep. One is the physiological response with our body in terms of producing more melatonin and so there's very clear clinical data that does showcase the fact that our bodies do produce more melatonin in response to being exposed to red and near infrared light and the next follow up question for most people usually is, "Well if I use it in the morning, do I get more sleepy then?"

Well the answer to that is actually no because our bodies are very smart in the sense that when we are producing more melatonin our bodies will store it and then release it at the right time of day based on our circadian rhythm, which leads to the part two of that answer, which is using the right type of light at the right time of the day. So thinking about the morning sunrise and when the sun sets, our bodies, our circadian rhythm responds to those different light frequencies.

And so when we are using bright blue or white light at night, our body is thinking – that serves almost like a signal to our brain that it is midday sun and we are supposed to be wide awake because of that bright light when in reality, we need to be preparing to rest for a good night sleep and so that is why using the right type of light, ideally light that has a lower kelvin temperature at night because it is more warmer, something in that kind of that 2000 or so.

2,000 or below is a really great way to illuminate rooms of your home and your apartment at night for just healthy circadian rhythm management if you will. So there is two different things going on. One is the therapeutic physiological response in terms of our bodies releasing more melatonin in response to red near infrared light and the other aspect is really more centered around just making sure that we are not intentionally or unintentionally disrupting our circadian rhythm.

**[0:36:52.9] AVH:** For your products, what is the standard lifetime of these things? Do you have to get individual bulbs replaced? How does that work? Is it normally last a few years or how does that work?

**[0:37:06.2] SN:** Yeah, so we use medical grade LED chip sets and drivers that are rated to last over 50,000 hours and so typically the LEDs themselves really rarely run into any issues. It is more probably some other component down the road that may eventually fail. So the devices themselves are certainly designed to last a very long time. Our modular products anyway, which is the modular kind of full body light therapy products the warranty on those are two years.

I could say that the amount of service or support request that we receive is very, very low primarily because they are designed to last a very long time.

**[0:37:41.9] AVH:** When a lot of us hear the word LED, we think of blue light and we think of lights that we're supposed to be avoiding for health. What is the difference between the LED light technology that we use and I have seen also in the market place red light or red light therapy kind of products that use incandescent light bulbs? Can you talk a little bit about that?

**[0:38:06.1] SN:** That is a great question. I am glad that we are able to kind of chat a little bit about this on the show is that there is a stigma or a lot of misconception around LEDs. Most of the problems when it comes to LEDs is the wave point of light that is emitted from the actual LED and LED is similar to a fluorescent bulb and incandescent bulb, a laser. It is just a source to produce light and so the stigma around LEDs being bad is actually a lot of that is based on just not understanding the fact.

When we think about LEDs that are used, high efficient LEDs that are used to illuminate a house that is not ideal because of the wave lengths of light that are produced at that particular source and a lot of times, those types of LEDs are far different from medical grade LEDs that are used for the purposes of light therapy but really at a high level it comes down to the wave length of light that's used. Some of those LEDs, those high efficient LED's do have a noticeable flicker effect.

Which can be disturbing, there is some research that suggest that a noticeable flicker rate can lead to some migraine headaches, some chronic fatigue, etcetera but again, that comes down to the fact that an LED that is used to illuminate a room is vastly different from a medical grade LED that is used for the purpose of light therapy. So that is kind of one thing to understand but the other high level question or a high level kind of subject is really comes back to the source, right?

So LEDs are actually – the world of photo medicine, most of the research kind of leading up to the mid-1990s or so was based around the use of cold lasers to produce these types of therapeutic benefits and lasers are great in the sense that you can deliver a very precise wavelength of light but they are often very expensive and they are very economically treat a very small area of your body and so when NASA actually was started awarding grant in the 1990s to study the effects of LED therapy, that is when we started to see a little bit more of this space start to evolve.

In terms of migrating from the use of lasers to LEDs because with LEDs those medical grade LEDs, you can deliver nearly the same type of precise wave lengths of light but you can do it over a much broader area and you can also deliver the same types of power if you are using the right types of LED driver. So LEDs represent a much more economical way to deliver therapeutic doses of light in a much more useable way versus lasers.

So that is the difference between lasers and LEDs but when it comes to other sources like fluorescent bulbs or incandescent bulbs, it comes back to that topic earlier around energy dosing and so with an incandescent bulb or like a heat lamp, there are some companies that product devices with heat lamps inside them. Heat lamps actually deliver a very broad spectrum of light. So you get everything from near infrared to mid infrared and even far infrared wave lengths emit from a heat lamp.

And that is why it gets hot to the touch is because most of those wavelengths that are emitted from an incandescent heat lamp are actually in that mid and far range. That is why those types of bulbs get so hot and then also the energy that is emitted from an incandescent heat lamp is actually very low. So to receive the title of clinically relevant benefits, you're just going to have to

use it for a very, very long period of time to match the energy doses that you can receive from a high powered LED device.

So again, it all comes back to what wave lengths of light are emitted from the device and what type of power does it actually deliver to your body and so fluorescent sources, incandescent sources, they're just very inefficient whereas medical grade LED's are actually very efficient are pretty economical and you can deliver that type of therapy across a very broad area of your body.

**[0:41:43.9] AVH:** Okay that is really interesting. This reminds me I was at the Bulletproof Labs in Venice, California and I don't know if they have a red light. It basically looks like a tanning bed but it is red. I don't know if that is you guys because it looks like your products, I don't know.

**[0:42:01.6] SN:** It is not ours, we don't make a bed but I know what you're referring to, yeah.

**[0:42:05.3] AVH:** Okay.

**[0:42:05.5] SN:** Bulletproof they have in the labs they have our devices that are in a vertical fashion where you are standing in front of them but they also have the LED beds too.

**[0:42:13.6] AVH:** Got it, yeah because I remember thinking this was really weird that I am lying in what essentially looks like a tanning bed and you've got this tiny little red light that is like a million lights and I am lying. I am like, "When is this going to warm up?" like I am supposed to be feeling any heat and I'm not and now I know because I spoke with you what that means. It is really interesting how many different products there are and I think this is why it's so helpful that you can explain these things in a way that you do because as you said, there are certainly products that are better and more efficient across the board.

But it is also really about what you are looking for and what you are trying to get out of it but this has been really helpful for me because I mean I spend a lot of time in the far infrared sauna sweating it out because it feels good and that makes me feel better but I really was unclear about in terms of the light therapy like how to get the best bang for your buck, what it's actually doing, how to address the specific issues that you're trying to address.

So this is really helpful so for your company, do you guys, in terms of the products that you're selling is it mostly to individuals or are you selling to clinics and gyms and facilities like that?

**[0:43:20.1] SN:** Yeah, we are primarily a direct to consumer company but we do have a growing and we're seeing a growing interest from commercial facilities that want to offer full body light therapy to their patients, to their clients, et cetera. So we do have that, it is a growing channel within our business and we see everyone from people that own cryotherapy facilities to boutique wellness recovery facilities like upgrade labs or restore cryotherapy.

To chiropractors, functional medicine doctors, etcetera it is a wide base of businesses or practitioners that are looking to introduce this to the patients but it is something that is definitely growing but yes, most of our customers are just consumers that are using our devices in their own homes.

**[0:44:04.5] AVH:** And the full body panel set up that you guys have, is that something that – does it require any special energy in terms of how you're plugging it in or is it going to be used anywhere at any home relatively easily?

**[0:44:19.8] SN:** Yeah, it is definitely the latter. It depends on the set up that you have. So with our full body systems, they are actually modular and what I mean by that is like Lego blocks. You can start out with a smaller panel or a smaller device and then add on to it overtime and they connect together both physically and electronically. So if you are new to light therapy and you don't really want to go all in yet with the more expensive full body system, you can get one.

And then add onto it later and it is not like a – we are trying to avoid this one and done kind of scenario where if you buy a smaller device and you want to go full body, you can't really add onto it and so that is what drove our design considerations around this modular concept but when it comes to – if you do have our largest system, which we call the Joovv Elite, which is actually six devices connected together that typically recommend that habits that be on its own.

Kind of 15 to 20 amps circuit depending on what else is on that circuit but there is no other significant power requirements other than that.

**[0:45:18.5] AVH:** Got it, okay. Yeah, I love the modular idea because I think that is smart for people because I mean let us be realistic, this is an investment and I think that more and more those of us in this sort of health herd community that is interested in learning and trying and experimenting and being treating our health in a proactive and holistic way, understand that there are investments that you make in your health rather than waiting until you are sick and then having to spend more money down the road.

But it is a lot to drop some money on an infrared or a light therapy device, right? But it is cool to be able to add on and play with things, experiment and do it that way. So okay, that's cool. All right, well we are coming near to the end here and I appreciate you taking the time and explaining things in a way that I understand. So I hope that our listeners feel the same way. Is there anything else before we get to where people can buy your products and learn more?

Is there anything else just from a high level perspective that you'd like people to know who maybe are on the fence, maybe somebody who thought that this was kind of woo-woo at the beginning and they are coming around me now by the end of the interviews or anything else you want us to know?

**[0:46:28.8] SN:** The only thing that I probably call out is just more of a summary, kind of rob our conversation because I know it ebbed and flow between high level stuff and in the weeds and nerdy type of conversation, but if I have been able to convince you that light is pretty important and you are interested in actually investing in a light therapy device, it really comes down to three things. You know, three things to probably look for if you are doing some research.

One is making sure the device delivers the clinically proven wavelengths of light, which are in that mid 600 millimeter range to the mid 800 millimeter range. So that is kind of rule number one. The second for two things to look for are really one and the same and it comes down to that dosage, which we have talked a little bit earlier about. So how much power is delivered to the device? That is an important question to consider. How much power is actually delivered from the device that actually your body absorbs?

And ideally, those numbers have been validated by independent third parties, that's the ideal and that third thing you want to be cognizant of is really just the treatment area. So is this something that you are wanting your whole body to receive? Is it just something that you want to do targeted treatments? So that is the next question that you probably want to answer is how do you envision using this type of therapy in your daily routine.

So if you are aware of those kind of three things, wavelengths, power and then size or treatment area of the device, those are probably the three most important things to consider if you are looking to invest in a light therapy device.

**[0:47:53.2] AVH:** Awesome. All right, well I think my next step is to buy one of the portable ones that I can pretend I am cool like Ben Greenfield and make myself pretty and healthy on my long plane rides but Scott, thank you so much for taking the time. This has really been very helpful and I think useful for me definitely and I hope for my listeners. Where can folks go to learn more about the company? I know you've got a lot of information on the website as well but what are the next steps for people?

**[0:48:20.4] SN:** Yeah, the next step would probably to visit our website if you want to learn more. It's [joovv.com](http://joovv.com). I mean if you are a science nerd like myself, I'd go to the learn section of our site that is chock full of long form educational articles that are all well sourced and a wide variety of benefits that come from light therapy. The other area that I direct you to is probably the review section, which houses all of the – I think there is close to a thousand reviews for people that have used all of our products.

Both the small and the large ones and you can see what people are saying in their own words about the therapy and we post everything there. Everything from the one star negative reviews to the five stars. Fortunately most of them are in that four to five star range but that is a good area too if you want to stay more high level and just get a sense for what people are – how people are using the devices and what they think about the therapy.

So yeah, that is probably the best place and if you are on social we are @joovvsocial on the main channels, Twitter, Instagram and Facebook. Instagram being probably our most active social media channel but you can always check us out there as well.

**[0:49:21.7] AVH:** Awesome. Scott, thank you for your time. We'll have to maybe do a part two or follow up if I have been using the red light therapy long enough that I am extra beautiful and then sleeping well so even more beautiful that's my hope. So I'll keep you posted and let you know how that goes but Scott, thank you so much for your time and thanks for doing what you do and I appreciate it.

**[0:49:41.9] SN:** Awesome, thanks for having me on Ashleigh. I really enjoyed it.

[END OF INTERVIEW]

**[0:49:49.0] AVH:** Okay everybody, thank you for listening. I hope you learned a little something because that is always the goal and if you like what you heard and you think someone else could benefit from this podcast, I'd love for you to share it on social media, maybe take a screenshot of the episode, tag Paleo Magazine, tag the muscle maven so we can all spread the love or better yet, leave me a nice rating and review on iTunes so that this podcast gets in front of more people who can benefit because that's what this is all about.

Thanks again to my show sponsor, Jones Dairy and join me next week, I am talking to the founder of one of my favorite supplement companies actually called Paleo Pro. They make fantastic really high quality low ingredients protein powder and it turns out that the co-founder, Doug Smith, has a pretty crazy, actually pretty harrowing story. A really intense story that brought him to start his company. You don't want to miss it. That's all the teaser I am going to give you.

You're just going to have to show up next week and listen to the podcast. It is maybe more excitement than you're used to hearing on Paleo Magazine Radio but you know I aim to please. So that's it folks. Have a great week and I'll see you here next week.

[OUTRO]

**[0:50:47.8] AV:** The intro music for Paleo Magazine Radio is a song called Stronger performed by Alter Ego and I hope you love it.

[END]