

Photobiomodulation As The Easy Potential Option For Alzheimer

Heather Sandison, ND
with **Dr. Lew Lim**



Heather Sandison, ND

Welcome back to the reverse Alzheimer's Summit. I'm your host, Dr. Heather Sandison, and I'm so delighted to introduce you today to Dr. Lew Lim. He is the founder and CEO of VieLight. And we use VieLight every day at Marama for our residents there. And I can not wait for him to answer some of my burning questions about the VieLight. And also to answer yours. Dr. Lim, I would love for you to just describe a little bit about how you got into this space, how you discovered VieLight and red light therapy, and what made you think to put this into a cap that people can wear on their heads for brain optimization.

Dr. Lew Lim

Thank you for asking. This actually goes back to the mid-nineties. I'm now in Toronto, but at that time I was in California in the Bay Area. And we were doing some technology work at a LED flat panel display for very elite experimenters at that time. But what I found was with lasers, it produced some really interesting things for the body. But I actually looked at what was not really published in English literature, but in the Russian language at the time, a lot of the laser work was done by the Soviet bloc at that time. A lot of Moscow in Estonia was part of Russia at that time. There was quite a lot of activity. So what they were doing then was experimenting with injecting light, red light specifically into the blood circulatory system. And they were saying things that, it actually improves the student outcomes like your recovery from diseases or immune system repair and postoperation is better and stuff. But actually, the first discovery published was in the mid-sixties in Hungary. But it led to quite a lot of interest in that particular part of the war. And eventually the bit about physics and biology.

And I began to ask the question of why we need to inject light into the vein when actually red light in the infrared can penetrate through the skin. So that is a lot of removal of intrusions. I tried that and asked the question if you were to try to do it in an effective manner. You want to see where the membrane is just thin and light able to penetrate. One of the areas there is convenience, actually, is the nasal membrane. So maybe it can penetrate the skin of the hand. But neither membrane could possibly take a very safe, low-level, level of energy. And then try that and look through the microscope and see what is happening to blood samples. And they

actually improved to cut it short. That is a really good way to do that. But the technology was not available and it was at a time to make a simple device that can be used conveniently by everyday folks. So we had to wait to do experiments going on doing a number of other things, but it was actually in 2000 the solid state technology was good enough for me and my engineers to produce something and we continued to do that and we actually released pretty much under the radar intranasal devices and achieved the same thing. We slowly formed the VieLight and marketed it to the world.

Heather Sandison, ND

I just want everybody to know what it is that we are talking about. So there is a cap that you put on your head and then there is an intranasal clip. So you put it up, you put the light into your nose, and then there is a clip on the outside so it stays put. And then you turn this light on for about 20 minutes. And what we see is that there are potential benefits for Alzheimer's and dementia. And so we have the privilege of talking with you today to understand all of the details about how that might be working, why we would expect that to work, what might be going on, what the mechanisms might be, and then also some of the research.

So you describe some of the early research, which was in lasers that were very expensive. From what I understand, in the '90s. You could not get a lot of light. You could not get a lot of lasers. They were just so expensive and many of them were hot. I guess they were also called lasers, but we are talking about a pretty specific part of the spectrum of the light spectrum, and not all of it is visible even. So they would say, let us dive into some of these pieces. So why the cap? Why on the head and the nose? So you describe the mucosal surfaces. Now, if any of that light is actually penetrating into the brain through the nose.

Dr. Lew Lim

We actually had our first case around 2011, and 2012 with a Dutch immigrant who lived in Vancouver, British Columbia. And his family was involved like clockwork. The siblings were all getting Alzheimer's at a certain age. So he was due to have it. He was actually facing mental decline and was diagnosed with Alzheimer's disease. So at that time, we only had the intranasal and actually presented that particular case, but we did not publish it because it is just one case and so we measured his cognitive performance.

He actually improved because in one case, you can dismiss it, and we will give you a placebo or something else happening. But it was a really solid case. Today he is in his mid-eighties. He is still doing well but he is progressed from the intranasal only to all his that you are familiar with. Now and then we did another small study. And our court included Michael Hammond in Harvard at that time, and he is from Boston University. In a few cases of people diagnosed with dementia and we did not filter them by levels. At that time you only had the neural alpha. Let us aim at a default mode, think about it later with the intranasal, and see what happens. The number of subjects, five of them, improved. We should remember that his score actually improved significantly. So it seems to be working again, small numbers. And then I thought, when you

study how memories were encoded, Gamma begins to feature more prominently around that time. So we are talking about 2015, 2016, someone coming out of UCSF. So, we did a case again and it was not published, but we did a presentation on another case in 40 years. He was a professional opera singer who was diagnosed with Alzheimer's disease, and he improved. But this time we also did a measure on EEG reading and we found that his Gamma went up. Incidentally, at the same time, towards the end of 2016 and MIT published this pretty well-known event in that field, a Gamma study when the direct flickering light flicked flickering at 40 hertz, which is 40 times a second in an animal study in a red model in progressive with symptoms of Alzheimer's disease. The animals improve, they measure it and find a reduction in markers of barium, light, and stuff like that.

That was okay. They seem to converge with the other things I'm doing. I'm already developing the gamma and tested it on this particular person so that was quite enlightening. And I think from there we kind of establish. We are doing more experiments. We are actually doing what is happening to components of the brain like microtubules and stuff. Life cells deposit different frequencies. We work with the University of Alberta, this involves quantum biologists, physicists and biophysicists, and people like that. We are finding some really interesting things. I'm beginning to understand more about life and what is interesting and maybe even higher.

Heather Sandison, ND

I want everybody to understand when you say alpha and gamma, what do you mean? What is the difference between those two settings? So in Marama, we have the neuro duo and neuro for the brain. So it is the cap for the brain. It includes the nasal piece and then it is the duo. So the duo means there are two. And you can go back and forth between alpha and gamma. So I want everyone to understand, like, why would you use Alpha? Why would you use Gamma? And then how do you do it?

Dr. Lew Lim

Before we do that, let me just briefly go through why these various components are not introduced. We use near-infrared so it penetrates deeper inherent kinds of meet us. Now the olfactory is actually part of the brain. It has direct projection to the hippocampus which is a memory area. So the amygdala, which is an emotional area, and importantly the thalamus which does this redirecting signals to other parts of the brain. So the nasal is important because the other components are on the North of the default mode network. Now by default, the network is an M1 network. When you are resting, not performing a task, there is some introspection. You get in closed eyes who get into that. And that is when your default mode network comes in. When the default network is healthy, it usually leads to a healthier brain and Alzheimer's disease, something related to that health of it. We found one network, depression, and a bunch of other conditions, including Parkinson's disease and so on. Now when you rest, get into your default mode network coming into play. Actually when you post and this is actually now because can cause is also the same kind of mode as when you get a default mode network you in the Alpha State is also similar when it goes close to eyes, it does nothing. You are in an alpha state too so

that helps there was an early and study done at Harvard on animals that were simulated with, promoting brain injury and it is quite different frequencies.

And I found that you did not test for gigahertz but they did elsewhere attendees and found that that particular pulse frequency produced the best outcomes in terms of recovery from an injured brain so that led to that 10 hertz. Now, the 40 hertz is not what I'm learning is not published. But I'm hypothesizing here to model what we are doing there seems to be a switch around that in mind for that kind of medium move when you are activating and most of the default mode, you may be moving away from it and activating some other network that actually makes you think better, get more alert, like the status network, there is also so it gets into do that.

And in the meantime, what the MIT study did was activated some brain cells called the microglia which is precise to remove this unwanted debris. The brain stuff is active when you are sleeping and your active lymphatic system cleans this stuff. What we figure in the microglia can be talked about for doxing. The wave is over-activated because it causes inflammatory calls. The ring. But in this one, we are in the research field. We are believing that modulation is probably activating the non-inflammatory subtype calling them too. So these could be doing that and it actually helps the microglia to help remove the unwanted debris in a print if it includes the beta-amyloid deposits plaques. And that is why some of us often recommend using the gamma when you are taking a nap or when you are sleeping. You actually help it a bit more. So that is very brief.

Heather Sandison, ND

So Gamma is the 40 hertz and then Alpha is the 10 hertz is the rate and natural pulses of light per second. So there are 10 pulses of light per second with Alpha. And do I understand correctly that it is amplifying your alpha wave? Is it associated with the brainwaves, alpha and gamma?

Dr. Lew Lim

It is interesting. We published a paper in 2017 that showed what happens when we do that gamma 40 hertz on the healthy brain and found that it actually elevated the power of the faster waves like alpha-beta, and gamma and reduced the delta theta. Now, this is interesting because in the world of neurofeedback your image, like when you have ADHD, even some evidence regarding schizophrenia, and so on know this so, and also this disease also can be correlated with too much of the slow waves. That is why you are behaving like that and not enough of the faster waves. So that we are able to change the waveforms, too, with remedies like gamma, even in healthy brains. With 10 hertz, based on the animal study done, there are a lot of experiments that can be done. We just use what is available to the population. What we know may accelerate a brain that is been through physical trauma like traumatic brain injury, or concussion from other sports from blast explosions. So that you may accelerate healing based on animal studies done at Harvard that is why this is some of the rationale generally some people report in 40 years the brain is too active too busy and whereas we do not really get anything like that from 10 hertz. So generally speaking, the default, go-to frequency is probably 10 hertz. And if you want higher

functioning and you have to be clear when your brain is going through some degeneration of 40 hertz is probably the device to go to.

Heather Sandison, ND

So the gamma 40 hertz is more associated with help for Alzheimer's and dementia. Now we are really excited to have the Alpha as well at Marama because anxiety is something that often comes with dementia. So many of our residents suffer, especially at the beginning when they are transitioning and getting into the routine at Marama. And so we find it very helpful to have that alpha mode, to help to calm people down. So I'm wondering if you guys have seen the same thing and if that is in the research as well, that using that alpha state, that 10 hertz is helpful for kind of other things?

Dr. Lew Lim

No, it is very interesting. It is actually I get feedback, no word. We are from neurofeedback practitioners who often say that they prime their patients with a 10 hertz. So if you are going to get better results, it is establishing your brain to be in a better state and become more receptive to sorting other treatments when it is stuff we are seeing. Now I have to say that we, I can not go and say, for sure we are going to treat no, that was a disease with any of these devices. That is why we are doing a large clinical trial that is been stymied by the pandemic for 2 to 3 years. So we restarted again and tried to prove it. So for now, we say we are just helping the brain to function better as a general statement.

Heather Sandison, ND

Let us talk about those mechanisms. My understanding of the Hamlin work, you mentioned Michael Hamlin. He published with you. He was extremely prolific in publishing papers and data around red light therapy, the use of red light therapies, and some of the mechanisms. My understanding of those is that there are a few mechanisms that are proposed, but the one that is maybe best understood is the effect of red light therapy on activating the mitochondria and the production of ATP through. Is it the cytochrome C oxygenates enzyme? And so what I understand about it is that essentially after using it multiple times, hopefully over time daily or six to five to six days a week, you are activating the mitochondria in a way that they are more efficient at producing ATP or the fuel that our brains and our cells run on. And a lot of us, I'm a naturopathic doctor and I see patients and often when I think about mitochondria, I think I make more carnitine, more ribosomes, more riboflavin, more CoQ10. Those are nutrients that are so important for mitochondrial function and there is red light therapy. And how it works was just kind of like my brain had to reshuffle, thinking about what was possible and what impacts the brain and all cell functions. So it speaks to that a little bit and how I think it is like zooming out. What are all of the things that impact cell help we do the Bredeson protocol where all of the things that are going to impact brain health for better or worse and light is one of those things outside of the typical box. The medical model of adding nutrients or pharmaceuticals or something. So I digress. Please tell us how this works.

Dr. Lew Lim

The most important explanation for the mechanism behind modulation is the activation of the mitochondria and actually what is happening is that the mitochondria become more receptive to follow modulation when it is performing optimally.

Heather Sandison, ND

And Photodiode modulation equals VieLight. It equals this red light therapy. That they are synonymous.

Dr. Lew Lim

So, following modulation most mainly I say again experimented with light, but the effect of lights on when the body is in the cells, and it is usually red to the infrared because the mitochondria are actually receptive to this window of wavelengths of light. The theory is that it activates the cytochrome c oxidase, a cytochrome C oxidase enzyme in the last terminal of the electron transport thing. Now what is happening is multifactorial. It is not just the increased production of ATP, ATP, it creates energy. There are some other things too. But one important thing to do is, you know, often the mitochondria is performing sub-optimally because nitric oxide is somehow stuck.

You know, it is stuck in the electron transport chain. So when it absorbs this red light, it releases this nitric oxide. And that is what I say is that this mortality, that is because it reduces your body. It does a bunch of other things too. But it is well known for helping the blood vessel walls to relax so you get better blood circulation. Now, what it also does is the evidence of other transcription factors. These factors can alter the proteins or alter genes for good and bad reasons, by a modulation is usually good because it helps release things like GDNF which brings your own neurotrophic factor which helps your brain to regrow. It has to control toxicity in the brain. When your brain does anything, it is the byproduct of some toxicity. So it helps to neutralize that it does to improve the integrity of the cell walls and a bunch of other things. So it is a collective thing. And what it also does is it seems to reduce the markers for inflammation. Now as in your practice, to see too much inflammation is not a good thing. Inflammation in the body is trying to heal something to do with the immune system, dealing with allergens, invading your body, and stuff like that. But you see inflammation actually just to summarize first and then go into details, Alzheimer's disease other than the other like cascade hypothesis, for which the drug companies are really going on. And the recent drug that has been showing good data, a candidate is focusing on the positive clearing. It has some serious side effects. But generally what is slowing down the decline due to Alzheimer's disease? But the other major hypothesis is the health of the mitochondria because it does so much other than energy and also inflammation.

There is increased recognition that Alzheimer's disease is a disease it could be to your immune system. And there is evidence that it could do an autoimmune. And this is discovered in just thinking, interestingly enough, about the research done for COVID-19. The brain is being seemed to be for COVID. The federal brain seems to be quite similar to Alzheimer's disease. So very similar

presentations. And it did this in a lot of market studies and so on. And what is quite common is that to be an increased level of cytokine secretion or inflammatory factors. So this inflammation going on, there is evidence of it being an autoimmune problem. It could be because, in COVID-19, we are doing a big clinical trial of COVID-19 by which if we finish one and we are going to a local study so we understand the mechanisms here is not completely understood what is happening.

Long-Covid, for example, the damage to the device closest in a microvascular system, it seems to be creating this response from the body and when is chronic it seems to be lingering on and this level of inflammation is all over time and it seems to be also affecting the brain and then the manage to compare the markers with Alzheimer's disease the presentation of similar. So it could be an inflammatory disease. So there is more research actually. A lot of this is coming out in Canada, at the University of Toronto. If I trying to find a cure the risk by looking at the inflammatory factors so but now if you look at what by moderation as a matter as a science and honest mechanisms, there is quite a lot of discussion about how for to by moderation obviously mitochondria activity and also helping with reducing this to high levels of inflammation. That is how you sustain.

Heather Sandison, ND

I always wonder when someone is talking about inflammation. The VieLight is helping to clear it out. But I also wonder if it is helping at a level to prevent inflammation because when there is inflammation, it is usually in response to something. So my question is always, well, why the inflammation, what triggered that? And certainly, in the case of COVID-19, we can say, but the virus and I think in Alzheimer's, we can point to things like herpes is associated with it, with the production of beta-amyloid plaques and other inflammatory markers that are associated with cognitive decline. And so it is interesting to start connecting those dots and say, well, VieLight is going to help no matter what the cause of the inflammation is. We are going to reduce some of that by getting it out, by helping the mitochondria produce more energy and working in all of the ways that they work so that there is just more efficient metabolism and processing in the brain at the level of the mitochondria and then at the cell. So very exciting stuff. And when we talk about a certain part of the reason why I was very quick to bring VieLight into Marama is because the risk is so low. Essentially it is cost and time. And at Marama, we have the luxury of being able to spread the costs over the 12 people who live there. And so we can diffuse some of that. But the risk is so low compared to so many of the other things that are typically available for people.

And then also what we see is we know that exercise is one of these modifiable risk factors, that diet is a modifiable risk factor, sleep. There are lots of things. And as people progress through the process and the degeneration associated with Alzheimer's, it is harder to get them to engage in those behavior changes that would be so beneficial. And the VieLight is something that we can just put on. It is very passive. And so we have had residents and participants in the clinical trial at my office who use the VieLight. And even when they are in those later stages, we certainly

anecdotally notice a benefit even in that day. I mentioned the reduction in anxiety with the alpha. And so that is part of why we have incorporated it so quickly in our program. Also, of course, the research that you have been pointing to is very much evidence-based. So I'm curious, are there any side effects or any risks that maybe I'm overlooking?

Dr. Lew Lim

We have got tens of thousands of devices around the world. We hardly hear of any serious side effects. So some people, when they use the VieLight device, they experience a multitude in the beginning. Maybe there is some adjustment happening but after the first treatment is not there anymore. That is a good thing. One thing about trying to understand why treatment and the level of energy you are supposed to deliver, why do we often say, for a normal, healthy person, you do not need to use it more than once every two days or so. If you have a condition, you can use it every day. Try to take one day off for treatment. Now, the reason is.

Heather Sandison, ND

That, yeah, okay.

Dr. Lew Lim

Now one of the things, one of the markers that is produced by moderation is just like everything at once, you do have some activity, you produce some level of reactive oxygen species, which is pretty radical. And you can imagine if you keep pumping, the free radicals are good at a low level. It stimulates an immune response. If you give up doing it too much, there is a danger of coming to a threshold where the effect plateaus off and you keep doing it. It might have a negative effect. So this is the biphasic response in by a modulation that is also discussed. So you want to do it, you have to write energy, but not too much of it. We haven't seen people using a lot and getting this problem, but we want to prevent it. If possible. So that is why it is also convenient because all you need to do is you have a condition. You want to do it once a day, it wakes up automatically. After 20 minutes. You can do all your activities. I use it when I go to sleep. I just put it on. Just go off and just slumber off people. Different people do it differently.

Heather Sandison, ND

If you do it while they are meditating.

Dr. Lew Lim

I can do meditation because there are a lot of stories behind it. It just does that and that is it. I do not know if people really keep doing it continuously. I say there is a possible risk in trying to do that. All you need is just a certain amount of energy and that is it.

Heather Sandison, ND

So it also helps with circadian rhythm. Do I understand that correctly? Because of the red light, I always think back to our hunter-gatherer ancestors. They were exposed to that red spectrum in the morning during sunrise and then at sunset. And is there some degree like does that make

sense to you that we are approximately doing that? And would it be helpful to use the VieLight more in the morning or more in the evening, like around sunrise or sunset, to help with that circadian rhythm?

Dr. Lew Lim

We have had others interested in doing a sleep study, but we have had reports of people using the red light converts in the evening. It actually helps to go to sleep. There is evidence that actually there is probably quite a number of years ago when this athlete in China was exposed to red, they actually increased the level of melatonin which is a sleep hormone. That could be helpful. But some people put a gamma, especially in the beginning. I'm just an alert that did not help me sleep so but I tried for years and I still went to bed. So what might be different from the night? Yeah.

Heather Sandison, ND

Maybe gamma in the morning and alpha in the evenings.

Dr. Lew Lim

Yeah. But mostly just used once. Once a day is enough for most people or once every two days.

Heather Sandison, ND

Okay. You do not either. When. Okay. So not using them both on the same day using one or the other.

Dr. Lew Lim

But you can experiment if it is not going to harm you too much and see how you feel about it. So you might find it if you keep doing that you are always going to be like it might experience a little bit of foginess or something. I've no idea. But maybe.

Heather Sandison, ND

Two months.

Dr. Lew Lim

Yeah.

Heather Sandison, ND

Interesting. So you mentioned before we started recording something really interesting, I'm so excited to learn that the position ends of each of the lights on the cap, on the helmet kind of device. It is not a full helmet. I do not want to give anybody the idea that it is a full helmet, but it is this device that you wear almost like a hat, and then plus the nose clip that each of these fights is very intentional, very thoughtful, and important about where they are and why. And you were talking about the default mode network. And then also that the nasal one is going into the amygdala, the hippocampus, in the thalamus. Now, are there other parts of the brain, like parts

of the cortex that are associated with vision or any sensation or anything like that that you are targeting? Or is it just this default mode network?

Dr. Lew Lim

Yeah, first of all, we try to make it simple and comfortable. No, there is one very important thing that we try to do. We may not, you know, at this moment or it may not be perfect for everybody, but we tried to have contact on those particular spots or while they make it convenient. No, we measure everything, we measure what you know, what is energy, and what power we want to deliver over what period of time. So it is a matter of those. Not to be predictable is when your contact and when you are.

That is why we do not do it in such a way where there is no one for the moment because everybody's head is different. And if you try one of those fixed-size helmet faults with those bigger heads, you actually are not, you know, just a bear. And when you have small heads like children, you know, you wobble and stuff. So it is not the most stable. Now, the big difference is this, if you are able to have contact with the amount of energy the further you are away. Actually, the attenuation is quite by the distance, but that is just physics. The inverse square law. No, the problem with this fixed helmet is, first of all, there is this circuit board in there with the LEDs. They got to keep away from contact. So there is a film just to take it, not make it too hot. So there is quite a lot of distance. We measured what landed on the scope you wanted to be like here is 7500, but the noises it makes are annoying when 99 milliwatts minus because your milliwatts are now first of all the LEDs to be used are customized for us. So the manufacturer of the LCD does this LCD just for us so that you go to a very high and be able to control it within a microsecond. There are mostly cables everywhere. No, I made it to 100 because for safety reasons they go too much if people use it too much, it is.

It could be for some to be higher than the threshold for people. It is kind of like when you go to the price sometimes, but you know, we have evolved to be able to handle double the power in most cases. Most companies can only get LEDs until recently about 23 milliwatts so it is pretty low power. Imagine you are away from that hardly any power touches it. I do not know what the number is. I say it is very, very low. I'm just surprised it does not. Do you think so? We we. We are very careful about the engineering, and the level of precision as much as we can. So we are continuing to do the research and maybe improve the comfort and form factor. And this is the result. Okay. We do not have a lot of LEDs and for reasons that we want to have maximum effect with comfort.

Heather Sandison, ND

I see. Okay. So it is not about covering the entire head. It is really specific and targeted about where it is going and making sure that it is stable.

Dr. Lew Lim

You only have enough energy to deliver. You have a lot of LEDs that are not that far away from you, okay, there is not enough power to do anything.

Heather Sandison, ND

Yeah, it is not going to penetrate into the brain where you want it to do the work.

Dr. Lew Lim

Exactly.

Heather Sandison, ND

What is on the horizon for you here at VieLight? And also just like the new discoveries and particularly as it pertains to Alzheimer's and dementia.

Dr. Lew Lim

Well, we are going to restart clinical trials, which is a big task. We are looking to recruit about 220 patients and do a double-blind study. And this time we might be revising a protocol to the design opportunities we got. We will stop for reasons beyond our control. Let us find a good reason to restart. So we are developing a new device, a new version, easy to do, a double-blind study, adding one more module to the head you know at the moment and neuro as an accessory this option is optional the X plus to the head and to the back so that could be added into the clinical trial. And we are going to do a like-for-like comparison with the drug that is getting a lot of publicity. This is our chance to say, okay, this drug is getting all these outcomes and side effects. Let us see how we do right, follow the same protocol, and see. Okay, you guys showed a slowdown of decline, but 27% over 18 months. We have some early studies that show maybe we could do some reversal, which is a totally, totally, you know, new level perspective, you know, for the whole thing. So I believe that there would not be any side effects. You guys are micro swelling in the brain for them acting like small percentage swelling to be put down in a phase three study like 17% at microbleeds. So I think we do not have any of this stuff. So I think it is a good chance for us to do a clinical study and like for like and see how we compare. So that is coming up for us.

But we have mentioned we have a big long study plan we hope to start. A lot of this will probably start in the first quarter of next year. We have got actually we have a bunch of results waiting to be published. There are some papers independently done on traumatic brain injury and athletic performance. There was a paper published by, I can say now the Italian researchers for autism, some really good, interesting results using the dual actually alpha in the morning and gamma and evening. We are doing a meditation study which is super interesting long term that is able to switch frequency patients to an altered state a lot less like the latest that we would finger so it is active performance and not a lot of things but we are also doing fundamental research.

The effect on microtubules, which are visual components of the brain, and see how the various frequencies are affecting. And I see that in the next couple of years, we will be more and more

able to customize treatment for specific conditions because we understand the brain better. So we have a new approach which is a very sophisticated version that can change parameters and there is a bunch of things but you gotta understand, we have forms to appreciate and use it better, but we are using that to experiment on meditators. See if you can maybe elevate brain function.

Heather Sandison, ND

How many things? So you guys are focused not only on the mechanisms and the basic science of how this is working in describing that but also very much on the outcomes of how people are doing? What is their experience of life when they use this intervention, which is so much more important, than surrogate markers like how many plaques or tangles are present? But more on what are people experiencing and what is the state of their disease and how do they function in the world, whether it is autism or an infection like COVID or dementia and Alzheimer's. So exciting stuff and clearly helpful across all of them because it is supporting the cell function fundamentally or supporting cell function. And in a way that is very safe. So I hope everyone can understand why we have incorporated this for all of our residents at Marama. And we will certainly tweak it a little bit after this conversation. And with me learning more directly from the stories, it is such a privilege and pleasure to connect with you. Dr. Lim, thank you so much. I want to make sure everyone knows how to find out more about VieLight.

Dr. Lew Lim

Well, go to the website vielight.com. There is our own website, but I know that quite a lot of things are being explained. Maybe we tend to get a little bit too scientific, I guess I'm just reading what and absorbing whatever you can because we were just doing a lot more. We have a lot of researchers and scientists on the team. I think they are more researchers than all the other tops in the company. We collaborate with numerous universities. We are talking about top universities and top people in this field. We are also collaborating. People are not even in this field, only they do. There are some other fields that we think we can use to understand this modality.

Heather Sandison, ND

So VieLight is vielight.com and if anyone is kind of confused and wondering what we are talking about because you can not see it, head straight to the website. There is a picture of a woman wearing it right on the front page and it will make perfect sense. Everything we have been describing when you see that and it is great.

Dr. Lew Lim

And then 1/2, let me get me.

Heather Sandison, ND

Oh, yeah, I'm sure everyone, it is very easy to use. You just put it on. And as Dr. Lim was describing, it is relatively comfortable. Yes. And then there is the clip into the nose. And it turns out.

Dr. Lew Lim

To be.

Heather Sandison, ND

You are perfect. It turns off automatically. You just turn it off and then it turns off automatically after 20 minutes.

Dr. Lew Lim

So I was just pulling this.

Heather Sandison, ND

Around the ears.

Dr. Lew Lim

And then.

Heather Sandison, ND

Over the head, that.

Dr. Lew Lim

Is. So you press the button and come out.

Heather Sandison, ND

And voila, it is on helping you hear.

Dr. Lew Lim

It just automatically lasts up to 20 minutes.

Heather Sandison, ND

Yeah. You do not even have to think about it. No, shut off. And it automatically you just have to remember to take it off. And we love that people can multitask, they can meditate. So somebody told me she talks about vegetables while she is wearing it. So lots of things that you can get done at the same time. And it is easy to do it very passively. So for people, if you are struggling to get a loved one with dementia to exercise more or, you know, eat a ketogenic diet or whatever it is that other components of the Rennison protocol do, this is one of those things that is pretty easy, relatively accessible for people to do. So, again, Dr. Limb, it is just been an absolute pleasure having you here.

Dr. Lew Lim

Well, thank you for having me on. I hope people will understand this better. And yeah, if you know, you can always write to inform someone so they do not have it all at this point.

Heather Sandison, ND

I can speak from experience. I have emailed info before and everyone has been so helpful and supportive. And you guys, you really have a great team over there.

Dr. Lew Lim

Thank you.

Heather Sandison, ND

Thank You thank you for the work that you are doing.

Dr. Lew Lim

It is an absolute pleasure to be on this.