The Future of Sports: Dr Lew Lim of Vielight On The New Emerging Technologies That Are Disrupting Th

Authority Magazine Editorial Staff

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N*ew technologies have changed the way we engage in and watch sports. Sensors, Wearable Tech, Video Assistant Referees (VAR), and Instant Replay, are examples of new technologies that have changed the*

way we play and watch sports. In this interview series called, "The Future of Sports; New Emerging Technologies That Are Disrupting The World Of Sports," we are talking to sports leaders, athletes, sports tech experts, and sports equipment companies who can talk about the new technologies that are reshaping the sports world. As a part of this interview, we had the pleasure of interviewing Dr. Lew Lim.

Dr. Lew Lim is the founder and CEO of Vielight Inc., a pioneering company at the forefront of brain health innovation. He is internationally recognized for developing groundbreaking technologies in photobiomodulation (PBM) — the use of light energy to stimulate, heal, and optimize brain function. His research spans pivotal clinical trials addressing challenging neurological conditions, including dementia, traumatic brain injury (TBI), and cognitive dysfunction in long COVID.

Vielight's technology has already reached more than 100,000 users worldwide, offering accessible, non-invasive solutions to restore and enhance brain function.

Today, the fastest-growing group of users includes elite athletes from the NHL, NFL, and Olympic teams — individuals who are turning to PBM not just for recovery, but for a performance edge they can feel.

Thank you so much for joining us in this interview series! Before we dive in, our readers would love to "get to know you" a bit better. Can you tell us a bit about your 'backstory' and how you got started?

Unlike today, when photobiomodulation (PBM) is gaining mainstream recognition, my journey began long before most people had even heard of it.

In the mid-1990s, I became intrigued by the idea that light could influence biological function — something only a handful of people in the West were exploring at the time. While working in Silicon Valley and drawing on my background in light, flat panel displays, and laser technology, I began experimenting with how light might improve health by illuminating blood vessels through the nasal cavity.

Back then, intravenous laser therapy was being practiced quite widely in Russia, Eastern Europe, and China. But I saw potential in a non-invasive method — specifically intranasal delivery — and discovered it could significantly improve blood profiles, with implications for overall health. I then explored its use for brain health. As a result, I was granted a patent for the intranasal route to achieve cognitive effects with PBM, and then extended the concept to include transcranial light delivery to directly stimulate brain tissue.

These early innovations led to the first commercially available intranasal devices under the name MedicLights Research. But it wasn't until 2011, with the founding of Vielight Inc., that the vision truly came to life. I built a multidisciplinary team to advance the science, engineering, and global distribution of our technology.

As our devices began reaching more people, elite athletes eventually started using Vielight to support their quest for world titles. This led us deeper into sports science, and at the same time, we began receiving compelling feedback from individuals with traumatic brain injury (TBI), reporting rapid benefits. That pushed us to invest in clinical research to generate the high-level evidence required for regulatory approvals and broad adoption.

Today, we're entering a new chapter — exploring how PBM might not only heal but elevate healthy brain function, including enhancing meditation experiences and cognitive performance. In many ways, we're still just scratching the surface of what this technology can do.

Can you share the most interesting story that happened to you since you began your career?

Since the founding of Vielight, there have been several defining moments — both scientific and personal

— that continue to shape our direction.

One of the earliest and most formative experiences occurred during my initial experiments in the 1990s, when I explored the effects of low-level red laser light delivered intranasally. At the time, this was a novel, non-invasive approach. To my surprise, I observed marked improvements in blood biomarkers. The findings suggested real physiological impact. That discovery told me it could be the start of a very interesting journey.

Another moment that stands out was the 2020 case of an individual with moderate Alzheimer's disease (AD) who showed notable cognitive improvement after using one of our first-generation intranasal PBM devices. The expectation back then — and still widely held today — is that there is no recovery in AD. Witnessing the response of the patient's family — particularly their relief and renewed hope — was deeply moving. That case, along with other published studies showing signs of recovery in mild AD, was a powerful reminder of why we pursue this work. Hopefully, larger controlled trials will support these early outcomes.

Since then, Vielight has grown significantly. We have conducted multiple clinical studies and are now preparing for a large FDA-reviewed trial targeting AD.

Our research has also expanded into other critical areas where positive evidence has emerged. These include traumatic brain injury (TBI), brain fog associated with long COVID, Parkinson's disease, and autism. In collaboration with leading research institutions, we are initiating studies in depression, PTSD, stroke, addiction, sleep disorders, epilepsy, and more.

One notable recent milestone was the approval by Health Canada of one of our devices for the treatment of acute COVID-19 and upper respiratory tract infections.

As our research continues, we are making breakthrough discoveries that are regularly published in peer-reviewed journals. Each step brings us closer to redefining what is possible in non-invasive brain interventions with PBM.

Can you please give us your favorite "Life Lesson Quote"? Can you share how that was relevant to you in your life?

"Know what you are aiming for, do not be afraid to experiment, and be patient. Even if you never reach the destination, make it a fulfilling journey."

I wouldn't call myself a philosopher — I'm a scientist at heart — but this has become a guiding principle in my life and work. The essence of scientific discovery is experimentation, and that requires both clarity of purpose and a willingness to embrace uncertainty. Progress rarely comes in a straight line, and success is often slow — especially when you're working at the edge of what science understands.

For me, the journey has been about exploring how we can unlock the brain's full potential, particularly through photobiomodulation. That vision has kept me focused through years of trial, research, and iteration. Even when the outcomes were uncertain, the pursuit itself has been fulfilling.

So I believe the key is to choose a goal that not only drives you forward but also makes the process of getting there meaningful and enjoyable. That's how I've chosen to build both innovation and a life worth living. Or maybe I'm just lucky.

None of us are able to achieve success without some help along the way. Is there a particular person who you are grateful towards who helped get you to where you are? Can you share a story about that?

Vielight's progress has only been possible because of the exceptional people who have been part of this

journey.

First and foremost, the Vielight team stands out. Their dedication, talent, and belief in the mission have been the driving force behind our growth and have allowed us to punch above our weight. Our engineers deserve special recognition. They are often the unsung heroes — working intensely behind the scenes and delivering innovations that rival, and often surpass, the output of engineering teams many times our size. Much of what sets our devices apart comes from proprietary designs developed entirely in-house. These are not off-the-shelf solutions — they are the result of deep technical expertise and a clear focus on delivering functional outcomes.

Equally vital has been the role of our external research collaborators. I'd like to especially highlight the team at the University of Utah's neurology department. Their early observations of the effects of our PBM technology — particularly on the brains of American college football players with sub-concussive traumatic brain injury — led to a remarkable collaboration that continues to surprise other scientists. What began as an independent investigation quickly grew into a shared commitment to understanding and advancing the science. The work they have done has the potential to significantly influence how we protect and optimize brain health in contact sports, and it's a privilege to be a major part of that story.

Is there a particular book, film, or podcast that made a significant impact on you? Can you share a story or explain why it resonated with you so much?

One film that comes to mind is the satirical dystopian comedy *Idiocracy*. It's not a blockbuster, but its message stuck with me. The film presents a future where intelligence has drastically declined, and corporate influence dominates every aspect of life — from healthcare to government to basic human decision-making. At first glance, it's absurd and humorous. But beneath the satire lies a sobering commentary.

We're already seeing signs of this in the real world: misinformation spreading faster than facts, science being sidelined for convenience, and decisions increasingly driven by short-term profit rather than long-term wisdom. It raises the question — are we, as a society, slowly surrendering to that kind of intellectual decline?

For me, it was a wake-up call to stay vigilant, to defend critical thinking, and to keep advancing technologies that support — not replace — human intelligence and well-being.

You are a successful business leader. Which three character traits do you think were most instrumental to your success? Can you please share a story or example for each?

1. **Curiosity —** From the start, curiosity has driven everything. Back in the early 2000s, when few people were talking about photobiomodulation, I was deeply curious about how light could affect biology — especially the brain. That curiosity led to years of experimentation, and eventually, the development of our first intranasal PBM device. Without that constant desire to ask "what if?", Vielight wouldn't exist.
2. **Resilience —** There were times we faced significant pushback — from regulatory hurdles to skepticism in the medical field. I remember during the COVID-19 pandemic, we launched a clinical trial for the RX-Plus under incredibly difficult conditions. It was remote, resources were tight, and everything moved slowly. But we stayed the course. That trial eventually led to Health Canada approval — a major milestone made possible by resilience.
3. **Integrity —** We've always chosen to do things the right way, even when it's harder. For example, instead of making exaggerated claims to boost sales, we've invested heavily in clinical trials and peer-reviewed research — more than 20 independent studies so far. That commitment to integrity has built long-term trust with our users, researchers, and partners.

These traits — curiosity, resilience, and integrity — have shaped both our company and my personal journey. They're not just useful in business, but essential in building something that lasts.

How have you used your success to bring new technology to the world?

At Vielight, our approach to bringing new technology to the world is rooted in a deep commitment to research — not just commercial growth.

Unlike many commercial organizations, our primary motivation lies in scientific discovery and meaningful innovation. We reinvest our profits back into research and development — not into dividends for shareholders. We've chosen not to pursue outside investment, so we can take on financially risky research without the pressure to deliver short-term financial returns. Our full control of the supply chain — from invention to manufacturing to marketing and logistics — has made this possible, all while complying with rigorous medical device quality system certifications.

This model has allowed us to explore bold and uncharted directions, including the integration of artificial intelligence into our technology and the formation of high-level scientific collaborations. We see our work not just as creating products, but as contributing to a long-term legacy of improving brain health and human performance through evidence-based innovation.

It's not the fastest route to commercial success, but it's the one that makes us want to wake up in the morning.

Ok wonderful. Let's now shift to the main focus of our interview. Can you tell us what excites you most about Vielight's technology in sports? What makes you passionate about it, and how does the technology work to support athletic performance and recovery?

As someone who has been both an athlete and a lifelong sports enthusiast, the intersection of neuroscience and performance is of great interest to me. I used to compete in college-level badminton and squash and even coached before turning to golf, achieving a 4 handicap. So I understand how even the smallest edge can make a meaningful difference in performance.

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What excites me most about Vielight's technology in sports is its potential to restore and optimize brain function in ways that are often overlooked. In contact sports especially, athletes are constantly subjected not only to head acceleration but also to sub-concussive impacts. These don't always show up immediately, but over time, they can compromise cognitive function, reaction speed, and emotional regulation. In too many cases, they lead to progressive neurodegeneration as athletes age. Before we talk about peak performance, we need to address that foundational damage.

Photobiomodulation (PBM) offers a non-invasive way to do just that. Research has shown that PBM can reduce neuroinflammation, enhance cerebral blood flow, and stimulate the production of neurotrophic factors, all of which support the healing and recovery of brain tissue. Additionally, PBM appears to help restore optimal brainwave patterns associated with focus, clarity, and mental resilience.

This is what fuels my passion: giving athletes the ability to perform at their full potential by supporting the health of their most important organ — the brain. In doing so, we can help level the playing field, reduce the risk of long-term injury, and give players a real chance to thrive both on and off the field.

How do you think this might change the world of sports?

There is growing concern about the long-term effects of repeated head impacts in sports. Many retired

athletes face cognitive decline, emotional instability, substance dependency, and, in the worst cases, suicidal ideation. This is no longer anecdotal; it's a systemic issue in contact sports that demands proactive solutions.

Researchers are now demonstrating that regular use of Vielight's PBM technology may improve brain resilience in contact sports, potentially reducing the damage caused by repeated head impacts. These findings are both promising and timely. Once peer-reviewed and published, I believe they could shift how we approach brain health in athletics.

If we can show that photobiomodulation is effective, safe, and easy to integrate into training routines, it has the potential to become a foundational tool in sports medicine. The device is simple to use, non-invasive, and requires only minutes per session — making it highly accessible to athletes at all levels.

My hope is that one day, Vielight PBM devices will be as common in an athlete's gear bag as a foam roller or heart rate monitor — because protecting the brain should be as essential as training the body.

Can you see any potential drawbacks about this technology?

Like any emerging technology, photobiomodulation (PBM) is not without its challenges. Thankfully, safety is not one of them. To date, there have been no reports of severe adverse events associated with the use of PBM that I am aware of, which makes it one of the safest brain stimulation modalities available. That said, we do recognize that overuse may lead to diminishing returns or suboptimal outcomes, particularly if not used with proper guidance.

One of the complexities we face is individual variability. People respond differently to PBM depending on factors such as physiology, genetics, brain state, and lifestyle. This means that while the technology is generally safe, the optimal parameters for dosage, frequency, and stimulation patterns can vary. To address this, our work in artificial intelligence aims to help personalize PBM protocols by adjusting those variables accordingly.

As for skepticism — it's understandable. When a technology is both widely effective and non-invasive, it can sound too good to be true. PBM works by restoring mitochondrial function, which supports energy production and cellular repair. Because mitochondria are central to nearly every biological process, the effects of PBM can seem wide-ranging — and that, paradoxically, often invites doubt among scientists.

Our focus remains on building robust scientific evidence through peer-reviewed studies and clinical trials. Over time, as the data continues to accumulate, we believe that broader acceptance will follow — not because of hype, but because of well-documented, reproducible results.

What are the 3 things that concern you about the sports industry today? Can you explain? What can be done to address or correct those concerns?

While I am not an elite coach or performance trainer, my work in brain health and neuromodulation has given me perspective on some of the most pressing challenges in the sports industry:

1. Long-term brain health is still not a priority.
In contact sports, repeated head impacts — even those that don't cause immediate symptoms — are increasingly linked to cognitive decline, mood disorders, and neurodegenerative conditions. Unfortunately, brain care remains largely reactive rather than proactive. By the time symptoms emerge, the damage may already be significant. Early intervention — including tools that support neuroprotection and brain recovery — should be integrated into routine athlete care, not reserved for when problems arise.

2. There is too much faith in quick fixes.
The pressure to perform often pushes athletes toward stimulants, supplements, or trendy "hacks." While some may offer short-term gains, they can compromise long-term health and resilience. The emphasis

must shift toward sustainable, science-backed strategies that build lasting capacity for performance and recovery — without hidden risks.

3. Access to advanced recovery tools remains uneven.
Elite athletes increasingly benefit from high-end recovery technologies, but these are often out of reach for younger, grassroots, or underfunded athletes. This creates a gap in both protection and opportunity — especially when early brain care could have the greatest impact. Scalable, non-invasive tools like photobiomodulation should be made more accessible and better understood across all levels of sport.

What can be done?
The sports world needs to make brain health and recovery core components of athletic development. This includes better education about the neurological demands of sport, early adoption of safe and effective technologies, and a cultural shift away from short-term thinking. When athletes are supported cognitively and neurologically, they not only perform better — they are also more likely to enjoy long, healthy careers and lives after sport.

Fantastic. Here is the main question of our interview. What are your "5 Things I Wish Someone Told Me Before I Started" and why? (Please share a story or example for each.)

1. Science does not sell itself — especially when it challenges convention.

I assumed that if you build something effective and back it with strong data, people would naturally take notice. But disrupting the status quo — especially in medicine — requires more than evidence. It takes consistent effort and a motivated, intelligent marketing team executing a plan they truly believe in.

2. Expect resistance from those trained to protect the existing system.

Photobiomodulation is non-pharmaceutical, non-invasive, and relatively inexpensive. Ironically, these

strengths also make it disruptive. I learned that many healthcare professionals are conditioned to trust drugs and procedures over emerging alternatives, regardless of the science. Building credibility in this landscape takes time, sustained effort, and resilience.

3. Evidence alone does not move policy — relationships do.

I come from a world where decisions are guided by evidence. But in the real world — even in healthcare — adoption often depends on who you know, not just what you know. Building relationships, though outside my comfort zone, is a necessary investment of time and energy.

4. Be prepared to explain your science in 1,000 different ways.

The complexity of PBM means you'll need to tailor your message for different audiences — scientists, clinicians, athletes, and the general public. I have had to learn how to shift between clinical, technical, and practical languages without losing the essence of the science. It's a skill I continue to develop.

5. Not everyone is ready for transformation — even if it helps them.

Sometimes, the people who could benefit most from innovation are the ones least open to it — due to ideology, fear, pride, or habit. This was hard to accept. You cannot force transformation; it often requires patience. But that does not excuse you from doing the hard work to make it possible.

You are a person of great influence. If you could inspire a movement that would bring the most amount of good to the most amount of people, what would that be? You never know what your idea can trigger. :-)

I don't think Vielight — or I — ever set out to lead a movement. But I understand the question is hypothetical.

If a movement were to emerge from our work, it would likely grow out of a collective realization that photobiomodulation holds vast, still largely untapped potential to improve brain health and human performance. If that recognition spreads, and if the science continues to validate it, perhaps others will carry it forward — expanding access and awareness on a broader scale.

If the right elements align — public interest, scientific momentum, and leadership willing to think beyond conventional healthcare — then what we're doing today could contribute to something much larger tomorrow. And if that evolves organically into a movement, we'll be more than happy to fan the flame from the sidelines.

We are very blessed that very prominent leaders read this column. Is there a person in the world, or in the US with whom you would like to have a private breakfast or lunch, and why? He or she might just see this if we tag them :-)

If I had the opportunity to speak with a prominent global leader — whether in the United States or internationally — I would hope to engage someone who has the power to influence public health policy at scale. That could include national health ministers, regulatory leaders, or even a disruptor willing to think differently — someone like Robert F. Kennedy Jr., the U.S. Secretary of Health and Human Services.

Photobiomodulation has the potential to significantly improve quality of life while also reducing long-term healthcare costs — particularly in areas like neurodegeneration, brain injury, mental health, and chronic inflammation. These are escalating challenges that place immense strain on both individuals and public health systems.

Yet PBM remains underutilized — largely because it's unfamiliar to most policymakers. Medical education in the U.S. and other countries still leans heavily toward pharmaceuticals, and disruptive, non-

pharmaceutical technologies like PBM often face resistance.

My goal in such a meeting would be to share the scientific evidence, highlight the safety and accessibility of the technology, and encourage support for independent validation. Sometimes, all a good idea needs is a chance — and the right listener — to open the right door.

How can our readers further follow your work online?

To stay connected with Vielight and explore our latest advancements in photobiomodulation technology, you can:

- Sign up for our newsletter: https://www.vielight.com/vielight-e-newsletter/
- Visit our official website: www.vielight.com
- Follow us on Instagram: @vielight.inc
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These platforms offer insights into our research, product updates, and how our technology is making a difference in brain health, sports performance, and beyond.

Thank you so much for these excellent stories and insights. We wish you continued success on your great work!