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Health Tech: Dr. Sean Ianchulev Of Eyenovia On How Their Technology Can Make An Important Impact On Our Overall Wellness

An Interview With David Leichner



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In recent years, Big Tech has gotten a bad rep. But of course many tech companies are doing important work making monumental positive changes to society, health, and the environment. To highlight these, we started a new interview series about “Technology Making An Important Positive Social Impact”. We are interviewing leaders of tech companies who are creating or have created a tech product that is helping to make a positive change in people’s lives or the environment. As a part of this series, I had the pleasure of interviewing Dr. Sean



Before founding Eyenovia, Dr. Sean Ianchulev had established himself as a pioneer and innovator in the field of ophthalmology. Inspired by his mother, a former retina surgeon, clinician, and university professor, Dr. Ianchulev would successfully carve a path of his own, pioneering several breakthroughs in the field of ophthalmology while serving as Eyenovia’s Chief Executive Officer, its Chief Medical Officer and a member of its Board of Directors.

In early June, Dr. Ianchulev announced he would transition to Chairman of the company’s Board of Directors to focus on strategy and on the next horizon of innovations in the ophthalmic field.

Dr. Ianchulev is a successful entrepreneur, world famous ophthalmologist and innovator who founded Eyenovia in 2014. He has led the company from inception through its initial public offering to becoming one of the most innovative late-stage bio-pharmaceutical companies in the ophthalmic space with the first smart delivery platform for topical eye pharmaceuticals.

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Thank you so much for joining us in this interview series. Before we dive in, our readers would love to learn a bit more about you. Can you tell us a bit about your childhood backstory and how you grew up?

I rarely think back to my childhood as my life was very different then and I would rather live in the present. Growing up in an authoritarian communist system for most of my childhood meant no freedom, no travel without a police stamp, no access to western literature and culture (of course no internet) and living in a constant fear of saying or doing something that could put you and your family in jail. I never knew my grandfather as he died after 7 years in a concentration camp where he was sent for advocating for democracy. But in those years, I was also surrounded by a strong and supportive network of family and friends who believed in me and encouraged me along the way.

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

Too many stories to tell when you immigrate on your own to another continent at the age of 18.

The one that seems to fascinate people is how I landed in West Virginia when I first arrived in the US. In 1990 I had to choose a college to apply to out of high

school and because there was no internet and no easy access to “unsanctioned” information, I applied very late and had missed all application deadlines. The only colleges which offered me a position were West Virginia University and Oxford. I may be the only person who chose WVU over Oxford, but ultimately I am grateful that I chose to come to America and pursue my dreams. I discovered that in life, choices are important but not an end all be all. The ongoing pursuit is what truly transforms our choices to results. Life is non-linear and sometimes a subsequent choice can put you on a steeper trajectory to reach your destination.

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?

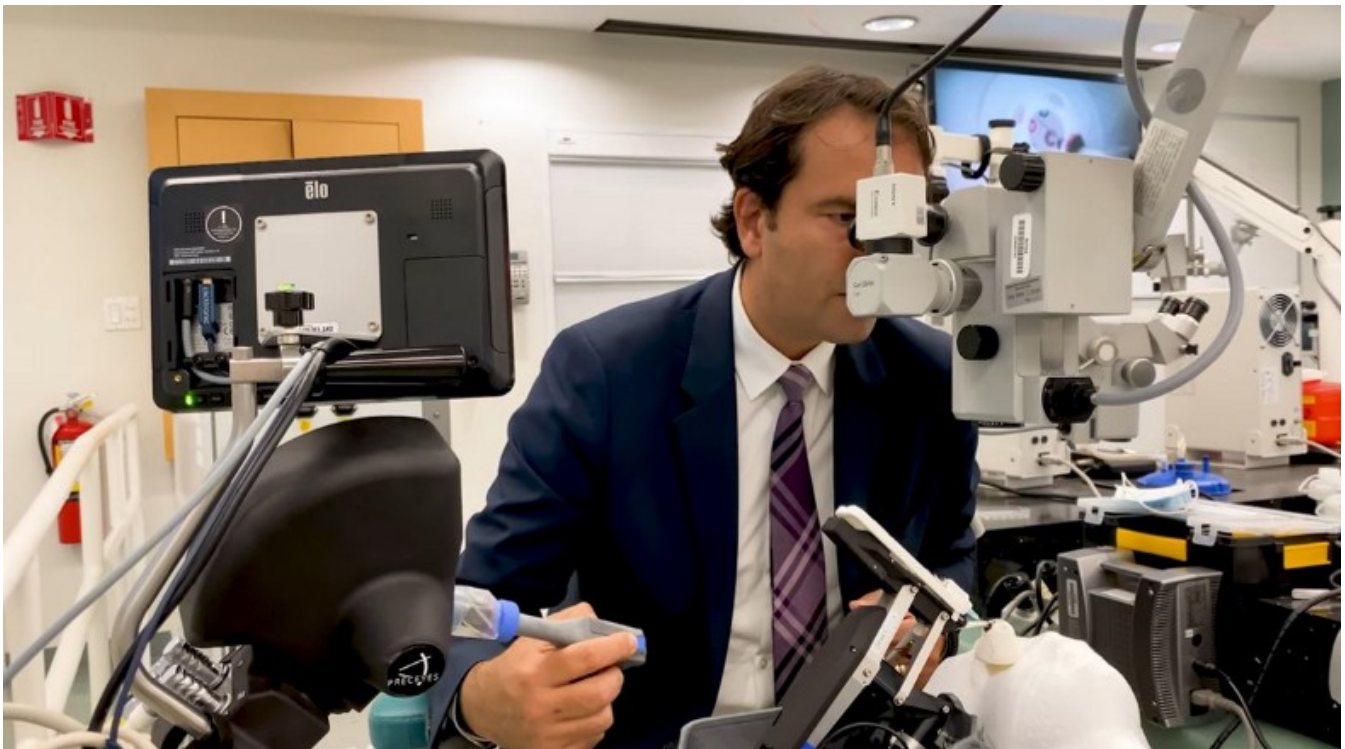
There are many people who fit that role, starting with my family, my wife, my parents, my friends and certainly many mentors who believed in me along the way. I have grown only because I have strived to meet the expectations of those who believed in me. Certainly, for the last 30 years, I have found tremendous support from my wife Elina. She finished MIT Sloan school of business and has business and strategic acumen. She understands what drives me and is very insightful to help me schedule my priorities and prioritize my schedule.

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

“If you get served a lemon, make a limoncello! Lemonade is for the Boy and Girl Scouts.”

With almost every project I have had a number of detours or setbacks or even near-death experiences for the work we were pursuing, but grit and

perseverance with a touch creative problem solving can go a long way to not only get you back on track but get you ahead of the breakdown point. It is true when they say that breakdowns can be turned into breakthroughs. More recently, one of the glaucoma stent implants we developed showed some unanticipated safety concerns in the long-term post-market studies. While an incremental device modification could be the answer, we came up with a radical breakthrough: a completely novel stent and one of the first biologic stents made of bio-tissue. This gave life to a new technology and a greater opportunity for patients. In my personal life, it is the same. I took the unknown path of innovation despite the very straight and simpler route of being a clinician or academician which was often discarded and frowned upon by doctors in favor of the traditional and well tread paths to success: the academic path to chairmanship or a busy private practice. Now, everyone wants to do innovation and entrepreneurship, but few have the skillset and experience. As someone who has developed both complex drugs/biologics and medical devices/implants, I see that the path I took not only was compatible with my nature, but also trailblazing and even a bit ahead of the curve.



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?

Grit, authenticity, and a “pinch” of self-deprecating attitude. Also, I learned to use mature defense mechanisms in life — this was a game changer in how I cope with challenges along the way.

One example is a development project a colleague of mine and I invented and developed during our training in residency — a virtual diagnostic perimetry test for glaucoma and optic nerve diseases. This was in 2002, 20 years ago when the internet still in its infancy. We shrunk a complex ophthalmic in-clinic diagnostic device that cost \$30,000-\$50,000 into something that was a medical device web-application — fully virtual and equally effective. This may have been the first ever virtual diagnostic device and we registered it with the FDA as well. It could underpin one of the most cost-effective screening programs at virtually no incremental cost as we take an expensive diagnostic

test out of the office and into the patients' hands anywhere, anytime, as long as there is a laptop with a browser. Exponentially scalable, but unfortunately payors and Medicare did not pay for glaucoma screening and had specific exclusions for out-of-office testing, so we had to philanthropically support the project on the side for the last 20 years — until COVID when everything changed, and telemedicine and remote care became all the rage. Because we sustained and persevered with the technology, we now have the only digital health platform for remote vision care and payors and health systems not only removed the barriers to telehealth but embraced it. So, for all the Star Trek aficionados out there, the advice is be a Klingon. Cling to your passion and authentic drive, especially when you are innovating well ahead of the established paradigm. It will take time.

Ok super. Let's now shift to the main part of our discussion about the tech tools that you are helping to create that can make a positive impact on our wellness. To begin, which particular problems are you aiming to solve?

I always gravitate to the more paradigm-shifting technologies, or what I call categorical innovation, where new solutions are developed for problems that have not been addressed for decades or even centuries. Unfortunately, these are also the more challenging ones. I wish that this was not the case — the more incremental innovations offer more of a path to follow. But with most of what I have worked on from Lucentis, intraoperative aberrometry, MIGS stenting, micro-interventional cataract instrumentation, micro-dosing, smart delivery technology, therapies for myopia and presbyopia, virtual diagnostic devices, etc., are all on the bleeding edges of what we call first-in-class which means they come with a lot more grasping at the dark to find the path forward. I guess, as an ophthalmologist, this is a worthy challenge as many of my visually impaired patients deal with this every day.

How do you think your technology can address this?

Currently, Eyenovia is solving big fundamental problems. We are going to Mars, yet we are still using century-old technology to deliver topical eye therapies. And 50% of the time, we overdose or inaccurately dose the ocular surface. Eyenovia is solving this problem with a 21st-century solution which can potentially deliver drops in space at zero gravity. We are also pursuing big game-changing therapies for presbyopia (age-related visual impairment of near vision) and childhood myopia (a global epidemic for our children).

Can you tell us the backstory about what inspired you to originally feel passionate about this cause?

The lack of innovation where we still use a century-old paradigm in eye care prevents many patients benefiting from sight saving therapies. I remember an 80-year-old patient of mine who was about to have a major eye surgery for glaucoma, which was averted after we found out that she was not able to deliver sight saving eye drops in her eye. Her family had to find someone to help her use the eye drops and she avoided major surgery. This was quite eye-opening and palpable. Today, many patients forgo the full benefits of their sight saving therapies because we have such outdated delivery technology including the eyedropper. We are still using the old rotary phone and a switchboard operator when it comes to the topical delivery paradigm of eye therapies.

How do you think this might change the world?

If we are successful, millions of people will benefit by utilizing a more human-centric delivery of therapeutic ophthalmic medications. This is high impact innovation.

Keeping “Black Mirror” and the “Law of Unintended Consequences” in mind, can you see any potential drawbacks about this technology that people

should think more deeply about?

The good part about medical innovation is that we solve problems which help move the ball forward when it comes to people's health and wellness. Of course, there are unintended consequences, but such is the case with life itself.

Here is the main question for our discussion. Based on your experience and success, can you please share “Five things you need to know to successfully create technology that can make a positive social impact”?

The problem, the clinical need, the patient benefit, and the state of technology that will be used to solve a problem.

Innovation in health care is highly scientific and utilitarian these days. You need to have risk-benefit in mind and solve a tangible problem and not a fictional one. So, defining the problem in the context of the stakeholder matrix of the health care system is key. The patient and the doctor are not the sole variables in the equation but also the large health care systems, payors, etc. The clinical need should be critically examined as well as the patient benefit. In addition, one must consider the current state of technology and barriers to adoption. Every project has taught me about these important factors to contemplate.

If you could tell other young people one thing about why they should consider making a positive impact on our environment or society, like you, what would you tell them?

When we develop any new solution for anything, regardless of whether it is about the environment or people's health, follow the simple rule: embrace and listen to critique, discard criticism, and discern the difference between the

two. Critique from others helps you pressure test and improve your solution. Criticism is the negative and deflating influence from the limited mind and inertia of establishmentarianism.

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, especially if we tag them. :-)

I like to have scotch for the social hour, so it has to be dinner.

I have many thoughtful friends who stimulate me and provide that conversation opportunity. I have respect for a lot of people who have done great things, but I find that there are also many great friends and people in my network who would have done the same if given the opportunity. And their minds are just as stimulating.

How can our readers further follow your work online?

For the most part, I like to keep away from social media and feel self-advertising is distracting to our ultimate goal of achieving results. However, you can follow Eyenovia's story and progress via our website and social media platforms.

This was very inspiring and informative. Thank you so much for the time you spent with this interview!

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A *bout The Interviewer: David Leichner is a veteran of the Israeli high-tech industry with significant experience in the areas of cyber and security, enterprise software and communications. At Cybellum, a leading provider of Product*

Security Lifecycle Management, David is responsible for creating and executing the marketing strategy and managing the global marketing team that forms the foundation for Cybellum's product and market penetration. Prior to Cybellum, David was CMO at SQream and VP Sales and Marketing at endpoint protection vendor, Cynet. David is the Chairman of the Friends of Israel and Member of the Board of Trustees of the Jerusalem Technology College. He holds a BA in Information Systems Management and an MBA in International Business from the City University of New York.



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